INDIA RUBBER WORLD
CAOUTCHOUC GUTTA-PERCHA

Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

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Vol. 31. JANUARY 1, 1905. No. 4.

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.
ADVERTISING: Rates will be made known on application.
DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Entered at New York Post Office as mail matter of the second-class.

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THE NATURAL SUPPLY OF RUBBER.

WE have been asked to reconcile certain expressions which have appeared in these columns, regarding the narrowing limits of the natural supplies of India-rubber, with the fact that the consumption of the material steadily increases. This we do not regard as a difficult task, if the various articles on the subject already printed be read in their intended connection, one with another.

During the past ten years the imports of raw rubber into the United States have nearly doubled. If we use the official customs returns, for the fiscal years ending June 30, the comparison is as follows:

	Pounds.		Pounds.
1893-94	33,737,783	1903-04	59,015,651

Meanwhile the imports for consumption in other countries probably have increased at a corresponding rate. How, then, can the rubber supply be said to show a decline?

The rate of production has *not* shown a decline. But that is not the question. The natural supplies of rubber are no greater now than at any given date in the past. The natural rubber area is no greater now than 50 years ago. But meanwhile the yearly production of rubber has increased a hundred fold. The point to be made is that this rate of increase must sometime reach a limit. The limit has already been reached in a great number of regions which might be named. In THE INDIA RUBBER WORLD of October 1, 1902 (page 8), was presented a diagram showing the steady growth of the rubber output of Colombia from almost nothing, in 1860, to upwards of 7,000,000 pounds in 1873, from which time there was a rapid decline to the present average of much less than 1,000,000 pounds a year. In the last issue of this Journal it was shown that the British colony of Lagos, in West Africa, exporting 5867 pounds of rubber in 1894, produced two years later nearly 6,500,000 pounds, since which time there had been a steady falling off to 131,311 pounds in 1903 (the date of the latest returns). The same experience is to be recorded from very many other districts, for reasons which are indicated in a contribution from Mr. Georg Waldau, on another page of this issue.

America has consumed millions of pounds of rubber obtained from Africa, and produced by processes which enabled a full grown man to get together one pound of the material by working a week on roots torn from the ground. A second crop of roots was never obtainable in the same area. The great bulk of the African rubber output to-day is from *lianes* (creepers) which never yield a product but once. All the rubber imported from South America under the name of "Caucho" is obtained by cutting down the trees which yield it.

The fact that rubber has so long been obtainable is due to the enormous original supply. But this supply has not been increased, or even kept up to the original limits, by any process of nature, and the rubber situation to day is comparable to a private fortune of fixed limits, which is diminished in proportion as its owner draws upon it. He may spend twice as much this year as last, but this does

not make him twice as rich; it only hastens the time when he will become bankrupt.

The same customs returns from which we quoted above give the following as the import values of the rubber covered in the statistics of the two years under consideration:

1893-94.....$15,077,903 1903-04.....$40,444,250

The chief significance of these figures is that the average import value of rubber—good, bad, and indifferent—has increased, in ten years, from 44.6 cents to 68.4 cents per pound. Is such an increase—amounting to more than 53 per cent.—explainable on any other ground than that rubber supplies have not been developed at a rate commensurate with the increase in the consumption of rubber?

It is quite possible that, somewhere or other, more rubber may be produced next year than this. It is out of the question to say in what year the highest output of rubber will be reached. Possibly higher prices for rubber than have been known hitherto are yet to be experienced. But there is no room for uncertainty on two points: (1) A continued increase in the industrial demands for rubber; and (2) the hastening of the extinction of the natural supply by every addition to the yearly production.

THE FATE OF ONE MONOPOLY.

THE career of the Dunlop tire company, reviewed at some length in another column, affords one of the most interesting chapters in the history of monopoly in trading. The outcome is of especial interest as illustrating the lack of foundation for the fears so often expressed that the interests of the masses are endangered by monopolies. The fact is that any commercial enterprise founded upon an economic fallacy must soon succumb by reason of its inherent weakness, as we have previously pointed out in discussing the so-called "trusts." In industrial and commercial development new forms of organization become necessary from time to time, and in taking the first steps in an untried field mistakes may be made, but nowhere are mistakes so speedily recognized and mended as where large capital is involved. For which reason alarmists over the evils of "monopoly" often find that the objects of their attacks have disappeared while they are still shouting—but not on account of the noise made over them.

The Dunlop tire company was not a "trust," and the monopoly which it was intended to exercise was one deemed wholly legitimate, both in law and by public opinion, being based upon a patent grant, and involving the right of an inventor, for a term of years, to the exclusive profits from his discovery. But the plans of the company were based upon two assumptions, both of which proved ill founded. The bicycle tire demand diminished, instead of growing constantly; and British patent law underwent a new construction. There are business principles as old as the world and that give no promise of change. So long as there are human wants to be met, those who cater to them honestly are entitled to a profit; this is sound trading. The Dunlop company, however—and we refer to this only as an illustration, and because of its one-time great prominence—involved something more than this.

The bicycle tire being deemed a permanent necessity, and the Dunlop patent impregnable, an almost fabulous amount of capital was subscribed, with the idea that throughout the life of the patent users of tires could be taxed to pay dividends upon that capital, without regard to the cost or actual value of the wares supplied to the public. The first result was that the high prices charged afforded a constant temptation to rival manufacturers to infringe the patent, from which they could not be dissuaded wholly by hundreds of actions at law brought by the Dunlop company. Secondly, by reason of this constant litigation, employing in one way or another the ablest legal and judicial minds in the kingdom, practically new patent law was created, as Chairman Du Cros recently told his shareholders, the result of which weakened the position of the company materially.

The recent expiration of the Dunlop patent ended the monopoly upon which the company was founded, but the directors have managed to convert the company into a manufacturing concern—which it was not, originally—prepared to take its place in the rubber industry on equal terms of competition, and where its profits will depend upon the amount of actual capital involved and the measure of business ability displayed.

As has been observed, the Dunlop monopoly was based upon a patent grant alone, and, therefore, no question of its legitimacy was raised. There has been no wiser provision of law in any country than that intended to secure due rewards to inventors and thereby promote progress. But any dividends paid upon the £2,000,000 in shares which Mr. Ernest Terah Hooley obtained for his part in promoting the Dunlop company—and which he subsequently disposed of at an advantage—could hardly be looked upon as a reward to the patentee of the tire. The manufacturing plants which the Dunlop company have been able to create out of the profits of their tire trading during the life of the patent are a subject for congratulation to the company alone; they are of little concern to the inventor of the tire.

We doubt not that in every country the question will yet arise as to how far a monopoly can be maintained in respect of an article of general utility, whether controlled by the inventor or by his assigns, beyond paying him a fair return, having regard to the value of the invention to the public. The weak point in the great company above referred to was in attempting to exact from the public a heavy tribute for the benefit of persons who had not conferred a corresponding benefit upon the public. The permanent success of such an undertaking for exacting excessive prices from the public would, of course, work great injury. But by the company's own confession their monopoly came to an end even before the expiration of their patent, which is only another confirmation of our view that the world is not in danger of going to the dogs because of "monopolies."

It does not follow that any single individual concerned in the matter from first to last, including Mr. Hooley, the promoter, acted in any case otherwise than in perfect good

faith and within his full legal rights, but now that the history of the patent is closed, it may be referred to as suggesting reasons for revising, in theory and practice, the application of the patent laws, to the extent of limiting even the temporary success of such attempts at monopoly as made the Dunlop company conspicuous.

THE INVENTOR OF A VEHICLE TIRE recently patented states in his specification that it "is preferably made of a high grade of Gutta-percha," whereas it is probable that he has never seen any Gutta-percha, and that this material is not at all adapted to the purpose described. If inventors, patent attorneys, and the patent office itself are so careless in the use of the terms "Rubber" and "Gutta-percha," it is not strange that a great part of the public should regard both as referring to the same substance.

"THE MAN WITH THE GUM SHOE is almost as extinct as the dodo," says the able *Mirror and Farmer*, of Manchester, New Hampshire, in an editorial in which, incidentally, some statements made by THE INDIA RUBBER WORLD are described as being "of especial interest and value." If the New Hampshire editor is still disposed to give weight to anything which may appear in this Journal, we beg to suggest that he would better confer with the rubber footwear manufacturers before again making such an assertion as that nowadays "most men find it unnecessary to incase their shoes in rubber sandals, even in rainy weather." If the present winter should continue as it started out, the profits of the rubber shoe business may be expected to break all records.

WE MIGHT BE PARDONED FOR EXPRESSING WONDER at how the able St. Louis *Republic* obtained certain information which appeared in the editorial columns of its issue of November 30. But on second thought we have decided to withhold such expression, in view of the matchless enterprise, combined with the marvelous and comprehensive intelligence, which characterizes the modern daily newspaper. All things are possible to the press; at least nothing is hidden from it. The information we refer to is stated in the following words:

> The Rubber Trust is rubbering around in Washington, looking for more protection. It has already increased the price of its goods three times during the year.

As everybody knows, the trusts work in the dark; nothing so disconcerts them as to have the newspapers expose their deeds. We feel that the rubber trust never meant to have it known that the price of its goods had been increased, and now that the truth has come out, we shall watch with interest the effect upon the trade. Also, the effect upon the rubber trust. We could wish that the able St. Louis editor had gone further, and worked out this problem: If the rubber trust can increase the price of its goods three times within a year with such protection as it has, how often could it make such increases with "more protection"?

THE COMPLIMENTS OF THE SEASON to the editor of the La Vista *Advertiser*, of Colorado! Writing in his paper of "the lately discovered Colorado rubber plant," he says: "We tried to stir up some interest in the matter last year." But the sample he had then "was dried up and too small to properly recognize." Hence no progress in 1904. But 1905 is going to be a great year, and we doubt not that the editor of the *Advertiser* will soon obtain a specimen plant of generous size, which he will keep well watered through the constant operation of a garden hose, and that he will succeed in stirring up so much interest as to win for himself the first niche in the Hall of Fame which is being erected for the discoverers of rubber in Colorado.

WAS THERE EVER MORE EXTREME CAUTION shown than appears in the latest business report of the Société La Haute Sangha, a Paris company trading in rubber in the French Congo? With assets stated at 1,906,668.76 francs, one branch of their undertaking is set down at the following remarkably modest valuation:

Plantations..... 1 franc.

The explanation given is that it is impossible to state the present actual value. Suppose every planting company was equally solicitous not to excite in the minds of the stockholders a too lively sense of the value of its plantation!

MECHANICALLY ATTACHED TIRES.

[FROM "THE HORSELESS AGE," NEW YORK.]

THE records of the patent office would seem to indicate that a considerable amount of mental energy is being expended throughout the country at the present time in the conception and working out of mechanically attached pneumatic tires. Hardly a week passes but one or more patents are granted on devices of this kind; and while it is not yet in the class with the non-refillable bottle, it seems likely that it soon will have assumed as many different shapes, and, like its older rival, will have accomplished no good beyond furnishing a source of income to the patent attorneys.

Tires of this type are all much alike in general construction. In fact, the requirements, in so far as attaching and detaching are concerned, are restricted, and the possible structural combinations so few that inventors have a narrow field in which to exercise their powers of origination, and their results must perforce be nearly alike. Yet so diligently do they stick to their self-imposed tasks, and so numerous are they, that one is prone to inquire what they are seeking. Is it the solution of the tire problem? If so, they are like marksmen who shoot well but know not where to aim, for the solution does not lie in the direction in which they are working.

Real tire trouble consists not in the difficulty experienced in removing a tire from or attaching it to a rim, but rather in the cause which makes its removal necessary, and the motorist is not looking with nearly so much anxiety for the tire that can be easily removed as for the tire that need not be removed. So far as he is concerned, if his tires will stay in proper condition it matters not by what means they are attached, and if his tires do not remain in proper condition the ease or difficulty with which he can remove a quantity of damaged rubber and fabric from the rim of a wheel and substitute for it a new tire of substantial value in dollars and cents usually gives him less concern than does the cost of the operation.

It would seem to be more to the point if those with inventive inclinations who are now working on mechanically attached pneumatic tires were to divert their attention to the production of a tire which will have lasting qualities. Undoubtedly long strides have been made in the development of this tire, especially during the past year, when the proper construction of the fabric to be used and the quality of rubber to be employed have, more than ever before, been made subjects for scientific study, but perfection is still a long way off. However, with a greater number struggling along there is increased likelihood that some one will eventually reach the goal.

A SELANGOR RUBBER PLANTER.

AN important influence in the development of the cultivation of India-rubber in the Far East has been exerted by Mr. Edward Valentine Carey, whose portrait appears on this page. Going out to Ceylon from England 23 years ago, Mr. Carey addressed himself seriously to the study of tropical planting, with the idea of outlining for himself a career in this field, and was successively interested in the planting of coffee, cinchona, and tea, with the result that during 11 years he had acquired an unusually extensive experience as a planter. Twelve years ago he was attracted to Selangor, in the Federated Malay States, where he has since resided. From the beginning he was recognized there as having a sound knowledge of the best methods of planting, and was warmly welcomed by his predecessors in that colony, who were endeavoring to make planting profitable there.

Soon after Mr. Carey's removal to Malaya the resident planters choose a committee of three to look after the promotion of their interests in common, consisting of Messrs. Carey, Stephenson, and Huttenbach. The result of their work was so satisfactory as to demonstrate the advantages of concerted efforts, and a planters' association was organized for the state of Selangor, and later in each of the other states, and eventually the United Planters' Association for the Federated Malay States. Mr. Carey was the first chairman of the Selangor Planters' Association, holding this position from 1892 to 1899. He was then chosen chairman of the United Planters' Association in 1899, holding this position for four years, when, in 1903, he was succeeded by Mr. W. W. Bailey.

EDWARD V. CAREY.

Identified always with the most progressive features in planting, Mr. Bailey was early among those in the Malay States to see the advantages from planting rubber, and in 1897 he became actively interested in this new branch of industry. He studiously devoted himself to the study of the best practice, in whatever country, in the planting of rubber, with a view to adopting whatever was especially fitted to his own locality, so that he has from the beginning taken a front rank among rubber planters in his colony, and he is now in charge as manager of a number of estates in Selangor on which rubber planting is the sole or the leading interest. It should be said here that the planting interest both in Ceylon and the Federated Malay States is largely conducted by incorporated companies, the shares of which are held not only in the colonies but in Great Britain, and it is high testimony to one man, that he should have the direction of a number of plantations. The more important estates in Mr. Carey's charge to-day are the "Bukit Rajah," "Sungei Binjai," and "Klanang," all near Klang, which is Mr. Carey's place of residence in the state of Selangor.

All told, there are now under Mr. Carey's charge some 500,000 rubber trees, on about 2000 acres of land. Part of this rubber is planted alone, while the remainder is interplanted with other crops, mainly coffee. Of course, in the latter case the idea is that ultimately the rubber will take the place of all the other growths, especially as coffee is no longer so profitable a crop in any country as when Mr. Carey first went to the Far East. The rubber under cultivation under Mr. Carey's direction is mainly of the *Hevea* species, though he has done considerable planting of *Hevea* in connection with *Ficus elastica*, there being in his judgment certain advantages from the interplanting of these species, in regard to which THE INDIA RUBBER WORLD hopes to be able a little later to present a report by Mr. Carey.

A very high compliment was paid to Mr. Carey by the planters of the Malay States, when, on the eve of his leaving the colony for an extended vacation, on September 17 last, the members of the United Planters' Association entertained him at dinner and delivered to him an address setting forth their great appreciation of his work in the advancement of the agricultural interests of the colony. Mr. Carey in his response to the address reviewed the history of planting in general in the Malay States, after which he came to the question of rubber. While overproduction of coffee had been experienced, he felt that it would be a long time before anything of the kind could be true of rubber. At present less than 1 per cent. of the world's requirements in rubber was afforded by cultivation. Referring to the recently obtained high prices for cultivated rubber he said: "Even if this were placed on the market at as low a price as 2 shillings, they would still be able to make a profit of 50 per cent.—a fact which made the rubber industry one of the most profitable ever known."

While he did not fear any danger in our time from overproduction, he cautioned the planters to be on the lookout for the possibility of disease creeping in, and to do everything in their power to guard against it by having the best possible expert advice. In one respect the planters of the Federated Malay States were especially fortunate, namely, in having the interested support of their government. In this connection, by the way, the appointment of an agricultural expert by the government—Mr. J. B. Carruthers, lately of Ceylon, who has become director of agriculture for the Federated Malay States at what is understood to be a liberal salary—bears out Mr. Carey's assertion respecting the policy of encouragement by the government to the planting industry.

Following the proceedings above reported, Mr. Carey went to Java in the capacity of labor commissioner for the Straits Settlements and the Federated Malay States, and succeeded in arranging for the importation of Javanese on terms which promise to render their employment as agricultural laborers most desirable, in view of the limited supply of native labor in various districts. Here, again, the government showed its liberal disposition toward the planters by making a liberal grant for the free transportation of the imported laborers. It must be understood that in Malaya, where tin mining hitherto has formed the most important field for the employment of labor, planting on the new scale which has been adopted is obliged to compete with the mining interest, and there must result at times scarcity of labor for the plantations.

Mr. Carey subsequently visited the United States, taking occasion to see the World's Fair at St. Louis, and has since gone to Europe, with a view to visiting his home before returning to Selangor.

EXPLORING FOR "CASTILLOA" RUBBER IN PANAMA.

Experiences of The Editor of "The India Rubber World."

SECOND LETTER.

Camp Rio Negro.—Roughing It.—Story of a Bridge.—*Castilloa* Groves.—Birds, Animals and Reptiles.—Cruz, the Hunter.—Trips of Exploration.—Chiquita, the Commodore, and "Mula Grande." Coagulating Rubber with Amole Juice.—Native Rubber Manufacture.—Llanos.—Don Raimon and Donna Maria.—A Treasure Hunt.

OUR plan at first, on coming ashore on the Azuero peninsula, had been to camp right where we landed but the "heng-hengs" (rodadors) were so troublesome that another spot had been chosen some eight miles inland, and having turned our belongings over to the *mozos*, we started over the trail for camp Rio Negro. The Commodore led, because he had brought his shotgun and planned to shoot something for supper. He made a gallant figure, striding along the trail in rubber soled shoes, and had deer or turkey appeared would certainly have dropped it. But the game was wary, and the only creature that dropped was the hunter himself when he inadvertently trod on a slimy log and sat down in a pool of water.

INTERIOR OF CAMP RIO NEGRO.

The trip took about three hours and led uphill slightly all of the way. The trail was fair, and ran through a sort of open forest, where there were many huge trees but not much of the dense jungle that is so often to be found in the tropics. The soil was a gravelly loam, with a clay underlay, and seemed to be rich, and the beds of the brooks and creeks were of hard gravel and boulders. All along the trail were *Castilloas*, sometimes singly and often in clumps. None of them was over 12 inches in diameter, and most of them had been tapped. Now and then was one that had been felled a year or two before, and frequently we saw stumps of what must once have been fine, large rubber trees.

Eight miles is a long distance in the tropics, and though lightly clad and walking slowly, we were soon very warm and wet through with perspiration. The Pioneer ventured the prediction that this was the last long tramp upon which the Commodore would carry an eight pound gun, and his prophecy came true. Even long journeys end, however, and after fording the Palo Secco, and a little later the Negro river, we emerged into a fine grove of *Castilloas*, and fronting it a palm thatched house that was to be our base of operations for many days. An hour later the mules arrived with the navy bags, and within fifteen minutes we were in dry clothing, had hammocks slung, and were ravenously watching the cook prepare supper of jerked venison, bacon, dago bread, and coffee. Later he made delicious chocolate, using condensed milk and serving it in *calabashes*. Just here—the supper and its preparation suggests it—let me say that the little camping stove was all right, but three stones between which the fire was built were just as good, while a candle box made a fine molding board. So too, with the hip boots of rubber—they kept us dry a couple of times in fording creeks, but it was so much easier to slop right through and dry out on the march that we didn't bother with them after the first day or two. It was lucky, however, that there were ample stores of rice and salt, for the natives had neglected to clear and plant during the dry season just preceding our visit and the whole countryside was on the verge of starvation. Not that they worried about it particularly; they simply ate what they could get and contentedly waited for the next dry season to come around.

Our first night in camp we slept part of us in hammocks and part on a platform of poles under which the *mozos* crept when the evening rain came on. The Pioneer kept a lantern burning, as he said it scared away the vampyre bats. It did not frighten the insects, however, for the morning light showed four white men well speckled with red spots. Just what the insect was could not be discovered, but it was most industrious. I counted 57 well defined bites between knee and ankle, and there were others. I also discovered how to scratch these bites and suffer no ill effects, and Oh! the joy of such scratching! The remedy was a 5 per cent. solution of formine applied to the surface after an orgy of scratching. In two hours after the application all the poison either from bite or finger nails wholly disappeared. It being Sunday, our *mozos* piously refrained from work, but in spite of their scruples they were induced to build a shelter for themselves, which they finally did, getting the roof on just before the afternoon downpour of rain began.

In speaking of the lack of enterprise that the natives show it must not for a moment be imagined that they are behind the times in everything. In the utilization of public money, for example, they could give Tammany Hall points of value. To cite an instance: The home government at Panama city appropriated $3000 for the building of a bridge over a river that flowed near a certain town. Shortly after that one of the holders of the fund approached the Pioneer and asked for an estimate as to the cost of putting up the bridge, remarking that he had $2000 for it. The Pioneer offered to do it for that sum, but the next morning, when the papers were to be drawn, there remained only $1500. Then the trustee proposed that a $750 bridge be built and that he and the Pioneer

divide $750. It took some trading to arrange that, and before it was finished there was left but $600. Then apparently all of the officials got a slice, for two days later there was but $10 left. Nor has the bridge ever been built, but there is still an excellent ford, which appears to suit the people just as well. They thus, it will be seen, equal us in distribution of government appropriations, and outclass us in some forms of piety. One of our rubbet cutters, for example, bore the name of Jesus Maria Dios—but he did not look the part.

During the forenoon I looked over the grove of *Castilloas* that fronted the house and found that most of them had been tapped that season. Indeed one of our *mozos* said that they had been tapped twice. The process of tapping here is quite different from that pictured by most who tell of the gathering of Panama rubber. They usually describe a series of zigzag cuts, running one into another from the base of the tree far up the trunk. Here each cut was individual, and made with two strokes, one horizontal, and the other slightly downward and joining the other so that a small slice of bark was taken out. In the lower part of the cut the thick *latex* gathers and is scraped into a *calabash* with the fingers. The trees as a rule were tapped as high as the native could reach, and frequently a rustic ladder or a rough staging enabled the gatherers to get higher up on the tree.

INDIAN TAPPING A "CASTILLOA."

It seems that the plot of trees at Rio Negro were not self sown, but were planted by the Indian in his rice field after the crop was gathered. There were 105 trees on about an eighth of an acre of land, said to be four years old. The rest of the clearing had grown up to jungle, but where the rubber trees were it was quite clear and the trees big and lusty. Their condition made me wonder if the cleaning that is carried on by up-to-date planters is after all so much of a necessity as they believe.

Although it was Sunday all went in swimming in the swift Rio Negro, and also went fishing (with a stick of dynamite) but only got one. The swimming was not prolonged because of the rodadors, that were quite troublesome. While in the water a band of brown faced monkeys expressed their disapproval of our Sabbath breaking by throwing sticks and branches at us from the tops of the lofty trees that hung far over the water. Speaking of the animals, there were deer, wild pigs, tapir, tiger cats, and jaguars, but they were rarely seen. Evidences of them were plenty, however. Once when we visited the *llanos* (grass plains), we saw where a jaguar had killed a two year old colt. For birds there were innumerable humming birds, a great variety of song birds, hawks, parrots, buzzards, cranes, grouse, doves, two kinds of wild turkeys, and the justly named "fire cracker bird." We saw no snakes, but iguanas and lizards were common.

The Indians think every kind of snake and even lizards and tree frogs poisonous. They, however, have what they assert is a sure cure for the bites of poisonous reptiles. After being bitten, if the sufferer will shut his eyes, reach behind, and select three leaves (any kind will do), quickly rub them together, and apply to the bitten part, a cure always results.

Our helpers were in part Indians, descendants of the Aztecs, and in part negroes from the Cauca. Of the former was Indolencia, whose strange complaining "monkey call" could be heard for miles. He always kept it up when alone in the woods, even if only a few hundred yards from camp. Of the latter was Cruz, a tall, loose jointed darkey, freshly pitted by smallpox. He was the hunter and was equipped with a muzzle loading "gaspipe" gun with a percussion lock. It was worth going miles to see him flush a turkey, locate the tree in which it alighted, steal within range, and then snap cap after cap until finally the gun went off and the turkey dropped, oftentimes getting away even then.

As it would be impossible to examine carefully the whole of the 800 square miles in the month allotted to it, we first got the general lay of the land, then laid out trips through typical sections, estimated their areas and computed the number of trees. From Rio Negro camp (about 250 feet above the sea level) trails were cut north, south, east, and west. Then came long

RUBBER CUTTERS AT RIO NEGRO CAMP.

COAGULATING RUBBER IN BALSA LOG.

WANCHO IN GROVE OF "CASTILLOA" PLANTED BY INDIANS.

and hard tramps, counting and measuring trees in typical blocks, and much questioning of native rubber cutters for a fair estimate of the conditions that obtained elsewhere. One fact soon impressed itself upon me. The *Castilloa* was certainly better adapted to flourish there than any other of the native trees. In spite of the war of extermination that had been previously waged against it, it was more abundant than any other single tree. It often happened that a group of from 40 to 50 could be counted from the trail, and it was a rare experience to go 25 feet in the lower forest without seeing at least one tree. While many of them were lofty, few were more than eight or ten inches in diameter. The very largest tree that I saw far up in a secluded mountain valley was not over 22 inches in diameter. The natives could always pick those that are the best milkers. As a rule these trees had a larger leaf area than the others, which accounts, I think, for the extra flow of *latex*. Those in the dense forest seemed to bear few seeds, while on the edges of the trails or in open places they were abundant seed bearers. There seemed to be no leaf or bark diseases, and even trees that had been mutilated the worst by the rubber gatherers seemed to be sound and healthy.

Exploration was, of course, greatly hindered by the heavy rains that came nearly every afternoon, and sometimes in the morning as well. These swelled the rivers so that fording was difficult and turned the steeper trails into muddy torrents. The shacks of Indians who were collecting rubber were often visited and deserted camps always examined. A camp usually consisted of a palm thatched leanto, just big enough for two men to sleep in, on a narrow pole covered bench. In one corner was a hole in the ground about two feet deep and 18 inches in diameter, to receive the rubber milk, and in which it was later coagulated. Three stones as big as a man's head formed the fireplace, with a bunch of dry sticks for fuel; *calabashes* for gathering, the *machete* for tapping, and the amole vine for coagulating, finish the tale of the rubber gatherers' equipment.

Although camp Rio Negro was headquarters, we were often obliged to make other camps for a few days. For example when examining the upper valleys 1000 feet above sea level a rubber gatherer's shack was our home for three days, Two things in particular were noted on this trip. The rubber trees rarely grew on the tops of the "hog backs" or ridges, but on the sides, and in the valleys. Nor did it grow in wet lands at all. Then the seeding of the tree at that altitude was about a month later than on lands only from 50 to 300 feet above the sea.

There was much less game in the upper country, and, weary of tinned meats, it was not surprising that we tried and enjoyed parrot stew, or that monkeys should have been turned into rabbit stew—not big, black 25 pound monkeys, of which we shot several, but the little brown faced edible monkeys.

It is not to be supposed that all work was done on foot. Wherever it was feasible either horses or mules were used, and by following the ancient Indian trails we were able to save ourselves much time and toil. The horses were small, gentle stallions and quite surefooted. I said gentle, and so they were toward all of human kind, but when turned out to browse there were some very pretty stallion fights, but with no harm done. The mules were small, but strong, and made much trouble because they knew of the grass plains some miles away and were in the habit of stealing away at night and making for them. As the trails in some places were very steep I chose a little mule called Chiquita, and she proved to be a treasure. She could ford a swift running river and keep her feet, while the others were stumbling and half swimming. I verily believe she could climb a greased pole or slide down a log chute and never miss her footing, if she so elected. The Scout, the Pioneer, and the Prospector rode horses, while the Commodore, who was a trifle over 200 in weight, took the "*mula grande*" or big mule.

Speaking of the Commodore's mount, I thought he would have trouble, for that particular mule demanded the same treatment that the other mules received. I saw him watch me when I leaned forward in the saddle and eased Chiquita up a sharp rise by twisting my fingers in her mane. The Commodore, however, by reason of his stoutness, could not easily do this and so sat up straight. The big mule grew sullen, and finally, as we forded the Marieto, and climbed its steep, clayey banks, he suddenly stopped half way up, shook himself and began to tip slowly over backwards. Of course the Commodore slid off over his tail, and sat down in the river, and an instant later was holding the big mule in his lap. I ought not to have laughed, nor should I had not Chiquita turned around and winked at me.

I had long wished to see how the Indians coagulated the *latex* of the *Castilloa* by the addition of the juice of the amole vine and now had the opportunity, not once but many times. Usually the coagulation is done in a hole in the ground; if,

CRUZ, THE HUNTER, WITH WILD TURKEY.

however, they are very careful, and are possessed of an axe, they cut a trough out of a "balsa" log and use that. When there is sufficient milk for coagulation, a bunch of vines is gathered, folded together, and pounded on a log with a heavy billet of wood until all of the fibers are well bruised. The mass is then rinsed in water, the fluid being run through a sieve, and then poured into the trough. Extreme care is taken not to stir

WANCHO'S RUBBER TAPPING TOOL.

the *latex*. Instead, as it begins at once to coagulate on the top, the rubber is gently pressed down, gathering to itself other particles, and at the same time it is forced toward one side of the receptacle. Thus by gently manipulating, squeezing, and handling, most of the coagulated rubber is finally gathered into one piece, which is lifted out and kneaded until much of the water is out of it. Some more amole water is then poured into the remaining liquid and by the same sort of careful manipulation another smaller slab of rubber is secured. The two are then stuck together. A week later the milk white mass of rubber will be jet black, of about half its first weight, and apparently as dry as a bone. Unless it is cut into strips and washed and dried again and all of the amole liquor got rid of, it will sweat and deteriorate, and have a smell that makes it most offensive.

The *machete* is used altogether for tapping by the natives in Central America. Just by way of experiment I tried two different tools that I brought with me from New York. One was a sort of farrier's knife, that did pretty well, but was not heavy enough; the other was the type of tool that is now in general use in Ceylon. While it was possible to tap with this latter tool, it did not do for the *Castilloa* as well as for the *Hevea*. The strong fiber in the bark, unless the tool be as sharp as a razor, makes the incision a tear rather than a clean cut. It is possible that the tool may be changed in shape slightly and do the work, but in its present shape it is not as good as the *machete*. Speaking of the fiber in the outer bark of the *Castilloa*, the natives used formerly, when they found a very large tree, to pound the bark until it was loose, then cut it off and dry it, and have a beautiful snow white sleeping mat, as soft as wool, and looking for all the world as if it were the product of a loom.

Here I must mention a rubber tapping tool invented by a native Panamanian whom I met, and who is not only a rubber gatherer but a thinker. Although so many men have tried to evolve a satisfactory tapping device for rubber trees, it is singular that the thought of a would be inventor in this line, almost invariably, turns first to some sort of vacuum or suction arrangement, that will not only act as a tapping tool, but pump the *latex* out of the tree. Of course a little study of the formation of the lactiferous tubes makes it evident that nothing of this sort is feasible. The suggestion, however, has come from a great variety of sources, and in some cases from scientific men. So it was interesting to run across the same mental processes and the same sort of deduction among the natives of the rubber countries. The illustration here given shows an instrument designed and made by the native referred to, a man named Wancho, who is shown in another illustration standing in a grove of *Castilloa*. The instrument consists of a cylinder of light balsa wood wound with codline, through which runs a piston made of hard wood, one end tipped with a short iron chisel. The chisel end of the cylinder is fitted with a strip of pure rubber, a packing to be drawn tightly around the tree. The puncture made and the piston withdrawn, the hope was that the cylinder would fill with *latex*. That expectation, however, was blasted, as only the usual amount of *latex* followed the cut.

Two of the long trips across country brought us out at the *llanos*, or grass plains—prairies containing some 25,000 acres, on which grazed some 150 head of cattle of the old Spanish strain, but big and fat for all of that. They were not at all wild, yet to milk a cow it was necessary to muzzle her calf and tie it to her front legs and she then seemed to feel that her offspring was getting the *leche* that really flowed into a *calabash*. In a little oasis of trees in this prairie of rich short grass, was a neat native house in which lived the keeper of the herd and his wife. Thin, almost to emaciation, was Don Raimon, gray haired, with the sparse beard of the true Indian, clad in white; he was the only energetic native that I saw on the peninsula. Donna Maria, his spouse, short, fat, and comely, in calico dress and blouse, barefooted, with a man's hat on her head, her own pipe in mouth, surrounded by hens and dogs, she cooked in a placid way that was most picturesque and restful. We slept at their house one night, but on the second visit signalled the schooner and went aboard to sleep, away from the various insects that always infest a cattle ranch.

It was during a visit to the *llanos* that we nearly lost the Prospector. It came about this way: From the time of the Spaniards the country has been known as a gold producer. Indeed,

NATIVE RUBBER CUTTER WITH MACHETE AND CALABASH.

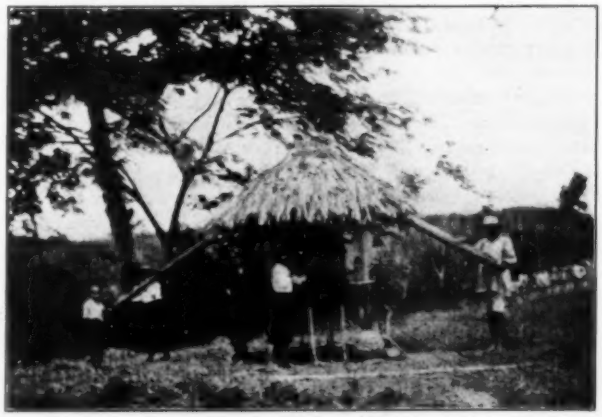
every brook and river showed traces of "color," while traditions of lost mines and their fabulous riches were everywhere rife. As we were not after gold, but rubber, the lost mines, or the sunken treasure ship at the mouth of the Marieto, troubled us not at all. That is, not until the Miner came across the mountains and rode into our camp with a true Western yell. He was a raw boned, good humored, shrewd, Irish-American, who had been in every mining camp in North America and who was now developing the Gallo (Golden Cock) mine. He and the Prospector got together at once and the air full of "*andesite*," "*quartz*," and "*porphory*." Then they got whispering and later parted. It was at the *llanos* that it all came to a head, for it was there that the Prospector began furtively to study a small diagram, and later stole away accompanied by an Indian whom he had hypnotized by the gift of a *real*. They took a bee line for the shore, forded the Marieto, and, on a little island that is half covered by the tide, hunted up a certain tree, strode away so many paces by compass, and started to dig.

CATTLE RANCH AT THE LLANOS.
[Don Raimon in the Foreground.]

It was exciting to see how eagerly they plied pick and shovel, and how they started with joy when the pick struck a tree root. And they dug and dug until they suddenly awoke to the fact that they were cut off from the main land by the tide. Then the Indian went all to pieces and wept and called upon the saints, while the Prospector uttered words unfit for publication. There was no danger unless an alligator or a jaguar got them, and as there was no boat the best thing would have been to wait for the ebb. Instead of that, they went further into the thicket and a few minutes later appeared each with a pole, and stepping into the swiftly running water started to cross. Very slowly, bracing themselves at every step, they waded, the water up to their breasts, and finally emerged into the shallows and were ashore. Neither of them went back, and thus ended our only treasure hunt.

The "gusano del monte," or grub fly, was quite in evidence at the *llanos*. I got three, the Scout seven, and the rest their share—just how many I have forgotten. But I have not forgotten the sharp twinge, like a red hot needle, that tells of the presence of the grub in one's flesh, or the killing of it with nicotine, the heating of the spot by a firebrand, and then the desperate squeeze that shoots the inch long intruder out into the open.

I also learned here why it was that so many of the natives have sore feet, about half of our men being then laid off. A disease which they call the "massamora," something like chillblains, attacks them, the cause being a minute insect that is found in stagnant water or decaying vegetation. Unless cared for, the feet swell dreadfully and the skin cracks and festers, making most troublesome sores.



SUGAR MILL NEAR LAS MINAS.
[On Las Margheritas Plantation.]

One of the worst rains came on while we were at *llanos*, but all were under cover—that is, all except the Prospector and the Scout, who came in drenched and cross because the rest were dry and feasting on mangos and bananas. While it rained Donna Maria was approached with the proposal that she get the Indian woman who lived near to do some washing. She got the woman to come over, but as it was a "fiesta" (St. Peter's day) she had religious scruples against working. Nor could she work the next day, she explained, as that was the fiesta of St. Paul. All of which was solemnly repeated by Elias Oho. I have not mentioned him before, but he deserves it. He was a boy about 14, hunchbacked, withered, with enormous black eyes, and treated by all the natives as a most distinguished guest, his condition being due to the fact that when he was young "a witch looked at him." Looking at him in turn one wondered what result that look had upon the witch.

What with heavy rains that made the trails bad and the rivers impassable for a half day at a time, the laziness of the natives, and their habit of disappearing to attend far away fiestas, not to speak of the way the mules had of hiding in the brush when they were most needed, we were not getting ahead as fast as could be wished. So the Prospector and the Miner, with Wancho, the best woodsman on the peninsula, took the schooner to the Quebro to arrange for trail cutters, or, better still, canoes and men to take us up that unknown river. In the meantime the rest of us went on with the work of exploration. A few days later the Quebro expedition returned and reported no canoes, no men, and no chance of getting through until the dry season, as the rains were far worse than where we were.

It was during the absence of the party named, however, that the rest of us went far up in the mountain valleys where no white man, even in the time of the Spaniards, had been, and preëmpting an old rubber cutter's shack, established ourselves in Camp Iguana. We were able to make the journey most of the way on mule back as an ancient Indian trail passed close to it. The barometer read 1000 feet elevation, but the *Castilloa* was just as plentiful as on the lower lands, and indeed, here were the largest trees. I found also a species of *Ficus* that produced a very good quality of rubber, but was not plentiful enough to have commercial value.

Our party consisted of the Pioneer, the Scout, the Commodore, the writer, three Indians, with one pack mule, besides those we rode. As there was no feed the mules were sent back to Rio Negro as soon as they were relieved of their burdens. The ride to Iguana, although rough in places, was delightful.

[TO BE CONTINUED.]

THE EXTINCTION OF AFRICAN RUBBERS.*

TO THE EDITOR OF THE INDIA RUBBER WORLD: In answer to your request for my experience in connection with rubber in Africa, and my opinion in regard to the future of its production, I have pleasure in submitting the following notes:

A part of the continent I know very well is the German colony of Kamerun, on the west coast, where I have been interested as a merchant for 23 years, and more recently in cocao and other plantations on a large scale. When I first went there rubber was not known to exist in the country. In the year 1884 I found *lianes* (creepers) of *Landolphia* growing abundantly on the Kamerun mountain. I taught the natives how to collect the juice and to prepare the raw rubber, taking much pains to explain that they must not take too much from each *liane*, as otherwise these would die.

The people soon found that rubber collecting was a good business, and the whole population went to "the bush." When a party came to a place where some of the precious *lianes* were growing a camp was made, and the collecting was performed in this way: Armed with cutlasses, some men climbed up in the trees where the *lianes* were hanging, cut these in pieces, and threw them down. Then the pieces were laid on low stands and the bark was chafed all over in order to get out as much as possible of the thick juice. When all the *lianes* had been treated in that way, the collecting party left the place to look for more. When I remonstrated against the destruction of the *lianes* they answered it was of no use to leave anything behind, as it would be taken away by whoever next came to the place after them.

In this way all the rubber *lianes* on Kamerun mountain were finished within three years. From here the search for rubber spread over the whole colony, and rubber was found almost all over the thick forest that covers the country, from the seacoast up to the grass lands of the interior. Different species of *Landolphia* were found, and also a large tree, giving just as good rubber, was growing in several parts of the country. Professor Paul Preuss, then as now director of the colonial botanical garden at Victoria, found that it was a species unknown to science and called it the *Kickxia elastica*.

The rubber collecting went further and further into the country, and was to the rubber producing trees and *lianes* the same as the forest fire is to the pine trees in the north. Both leave death and destruction behind, and are kept up only by moving on into new territories. In the most places the fire has already ceased from want of fuel, but in the remotest parts of the dense forest it is still smoldering—waiting for a gust of the "trade" wind to hasten on the destruction.

The same has been the course in all other parts of Africa where rubber has been found. The statistics prove it. In Lagos, where *Kickxia* was found in great abundance, the destruction of the rubber trees was much quicker than in Kamerun, due to the fact that the former country is more thickly populated and has better communications than Kamerun. The Congo Free State has the widest rubber producing areas in Africa, and most likely the rubber will last longer there than in any other part of the continent, in spite of the energetic efforts that are made to finish it as soon as possible.

In fifteen years more the rubber export from Africa will be of no consequence to the market. By that time all parts of the rubber producing forests will be gone through by the collectors, and the export will reach its minimum, at which rate it probably will keep on for several years. The export will not stop altogether, as some of the *Landolphia* and *Kickxia* plants that are too young to give rubber at the time of the first collection will in the course of time grow up and give rubber. Also many of the *lianes* that were cut off have not died, but pushed out new shoots and are growing out again. But any great increase in the export from this source is not to be expected, as very likely most of the new trees also will be destroyed at the first tapping.

The best protection to the rubber producing trees would be to give each an owner. This could be done by partitioning the forest area surrounding each village between the families in the village. Thus every native would feel a personal interest in the preservation of the rubber supply, whereas, where the rubber is common to all, the first thought of every collector is to get as much rubber as possible *now*, feeling that anything left for the future would be speedily wasted by some one else. This plan is said to have been adopted by the natives themselves in parts of the French colony Gaboon. It has also been done in one place on the Kamerun monntain, and not long ago I spoke with some men from that place. They told me how many rubber *lianes* each of them had, how big they were, and how long they still would have to wait before they could begin to tap the rubber. They used regularly to inspect the *lianes* to see that nothing happened to them. They laughed at the idea that anybody else would go and tap the rubber. The thief would always be detected, and as all people know that, and that a hard punishment would follow, the rubber plants are considered safe.

Perhaps to carry out this scheme would in many places not be possible, and even if it were, it would increase very little the rubber export. The only way to do this is to plant rubber trees on a great scale. That the natives will be inclined to engage in farming by which they have to wait ten years for a return, is not to be expected. At least it will be necessary that the white people show them a good example, as has been made in the planting of cocao. Rubber farming is practicable only for the capitalists, who have money enough to wait for the returns.

That practically nothing has been made in rubber culture in Africa thus far is due to the bad result of experiments made with some American rubber trees. In 1889 I purchased seeds of the rapidly growing *Manihot Glaziovii*, which grows in the Brazilian province of Ceará. A little later nearly all the cocao farms in Kamerun grew the *Manihot* as shade trees. They were planted on all kinds of ground and in different climates, from the Bonge country with its laterit ground and comparatively dry climate, to Debundja and Bibundi, with its black fertile soil and 11,000 millimeters [=433 inches] of rainfall yearly. In all places they grew well and quickly, but did not give any rubber. The same experience, I hear, has been made with *Manihot* in Java and India. Some years ago *Castilloa elastica* was also planted in Kamerun, and the result can soon be reported.

* The author of this contribution, a native of Sweden, is a member of the commercial firm Linnell & Co., composed of capitalists of Stockholm and Hamburg, trading in Kamerun. Among their interests is the "Debundja" cacao and coffee plantation, on a concession of lands on the Atlantic coast. Our author was a pioneer in Kamerun, having been the first white man ever seen in many of the native villages. He was the first to engage in rubber trading, and his conclusions in regard to present and prospective rubber conditions may be accepted as coming from an exceptionally well qualified observer.—THE EDITOR.

It has taken much work to protect this tree against the many enemies it seems to have in Kamerun, for which reason it is doubtful if this tree can be an object for farming on a large scale in Kamerun, even if it should give a satisfactory amount of rubber.

Considering that the trees with which those experiments were made are quite strangers to Africa, it is no wonder that the result was not good. As we now have such a splendid tree as the *Kickxia elastica*, growing wild in the country, this ought first of all be selected for planting. On many farms in Kamerun the *Kickxia* is now planted as a shade tree, and has shown itself hardy and fairly quick growing. If the planted trees turn out to give as much rubber as in a wild condition, a better rubber tree for cultivation in West Africa cannot be found. We expect to be able to begin to tap them when they are eignt years old. A wild growing *Kickxia* of ordinary size gives, without injury to its growth, one kilogram [=2.2 pounds] of rubber yearly.

It is high time that the colonies in Africa by extensive farming replace the destroyed rubber trees; otherwise there will in a few years be no African rubber to meet the ever increasing demand. Very likely the Germans in Kamerun will take the lead in this, as they have done in the cocao farming.

G. WALDAU.

December, 1904.

THE TROUBLE WITH AFRICAN RUBBERS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I noticed in the October 1 issue of THE INDIA RUBBER WORLD a letter from Mr. A. D. Thornton, of the Canadian Rubber Co. upon the subject of the deterioration of African rubbers; I also notice another letter in the December 1 issue from the same gentleman, and upon careful consideration I feel that it might be of some interest to the trade to give my own views upon this matter.

I cannot agree with all that Mr. Thornton says about the deterioration or African rubbers, because it has been my observation and experience that these rubbers do not of necessity deteriorate because of improper handling in their preparation, because I have noticed this in all of the Upper Congo rubbers, such as Ikelemba, "tresses," and Aruwimi, and I find that they become sticky and have the appearance of being heated on exposure to heat and light, and I have, therefore, arrived at the conclusion that this was caused by the presence of resins in the rubber. I have proved this to be true, at least to my own satisfaction, and I think I can demonstrate it to any one interested that this was the case.

Of course, every one connected with the rubber trade knows that African rubbers do contain a much larger percentage of resins than the South American rubbers, and it is, I believe, also a well known fact that rubbers which contain a large percentage of resins must be handled in a different manner from those that do not contain so much; and this is the reason, I believe, that Mr. Thornton has had the trouble which he has experienced with African rubbers.

It has been my invariable custom to treat rubbers which show that they contain an excessive amount of resins in an entirely different manner than those that do not contain so much resin, and I have never experienced any difficulty with them as yet. To the subject of resin and resinous matters in rubbers I have given a good deal of thought, and I have arrived at the conclusion that this is what gives our rubber manufacturers much of the difficulty which they experience in the factory with their formulas, and this also has forced me to the conclusion that there is no hard and fixed rule for handling rubbers. I have found this trouble in the case of South American rubbers, but not to as great an extent as will be found in the Africans. I have also arrived at the conclusion that this resin is the cause of deterioration of rubber goods to a large extent after they have been vulcanized, and this can only be overcome by rubber manufacturers treating each of the various kinds of rubber as an individual lot, and not treating the various lots collectively.

If this information is of any value to the trade, they are welcome to have it, because I believe in being broad minded enough to be willing to "help the other fellow" with his troubles, and I believe that if this policy was carried out to a greater extent in the trade, we would all get better results and profit by each others' experiences.

WILMER DUNBAR,
Factory Manager Pennsylvania Rubber Co.

Jeannette, Pennsylvania, December 7, 1904.

A CONGO RUBBER AND MINING COMPANY.

THE report of the Cie. du Katanga for the fiscal year 1903-04, while showing that their trading is still confined to Caoutchouc and ivory, indicates that active work has been done in the study of the mineral resources of its concession, and planning improved means of transportation. If the territory—in the southwest of the Congo Free State—should prove as rich in gold, copper, and tin as is now supposed, an important source of wealth will exist after the rubber has become exhausted. An attempt is being made, however, to provide for a continued supply of rubber by forming plantations. The profits of the company were smaller than in some former years; the output of rubber was only 85,852 kilograms, with 3949 kilos of ivory. But, the report says [November 16, 1904], "it is notable that the quality of the exported rubber is far superior to that of the product previously gathered. Katanga rubber is at present quoted at from 10 to 10.60 francs per kilogram—prices which rival those asked for the best grades of rubber gathered in the Congo territory." Reference is made to continued "difficulties raised by some of the native chiefs," the pacification of which has occupied the attention of the company since its formation in 1891. One feature of the report is as follows:

Plantations.—In the Lomami section, during the past six months, more than 400,000 seeds of rubber *lianes* have been planted in the nurseries, while 812,000 slips have been set out. The section at present possesses 268,300 small plants, and there are 932,000 saplings on its plantations. The other sections, which are only slightly wooded, are likewise commencing to give their attention to the planting of *lianes*. Nearly a million seeds of the red rubber *liane* of the Kasai district have been introduced into these sections. An agriculturist, having been sent on a special mission, visits the different posts and attends to everything pertaining to the plantations. Besides these plantations, each post has a vegetable garden, and in the mining regions large plantations are being laid out for the purpose of supplying the force occupied in working the mines.

FRED E. OSGOOD and Franklin F. Bradley (No. 706,590) produce a resilient rubber tire, light in weight and that will not be injured by punctures, by filling it with a sponge-like core. The process of manufacture consists in enclosing within an outer covering a core of less bulk than the space within the covering, and composed of a mixture of an expansible material and a chemical capable of generating gas when heated, and heating said mixture to generate a gas and permanently expand the core to completely fill the space within the outer covering. Hitherto tires have been made in which a core of sponge rubber has been surrounded by a rubber tube. By this method the rubber sponge and the tire proper are made in one operation.

ADVERTISING IN THE AMAZON COUNTRY.

HOWEVER foreign to American and European ways life on the Amazon may be, it does not follow that the collection of rubber there is carried on entirely in haphazard fashion. If it were, the maintenance of a yearly output of 30,000 tons of rubber through the port of Pará would be out of the question; the fleet of steamers on the Amazon would be without an assured patronage; and the large commercial houses of Pará and Manáos would at all times be in a position of uncertainty. These considerations are suggested by a glance over the advertisements appearing in late Pará daily newspapers, which would indicate that at least some kind of methods are observed in the conduct of the rubber business, and that these are generally recognized by the public; otherwise such advertisements as appear below (after translation) would have no meaning to the newspaper readers:

SERINGAES.

THERE will be sold about 600 estradas of seringueiras situated on the Laguna river, above Tajapuru and the Preta river, all within the municipality of Melgaço (in the district of Breves); fertile, healthful, and very pleasant. Communicate with Messrs. Thome de Vilhena & Co., here, and with the undersigned at Laguna. MAXIMINO NOBRE DE ALMEIDA.

Pará, October 31, 1904.

HELP FOR SERINGAL.

HELP required for work on rubber on the Acre. Hotel Universal, room No. 6, from 10 to 11 A. M., and from 4 to 5 o'clock, P. M.

SERINGAL ON THE ACRE.

RODRIGUES DE SOUZA, broker, is authorized to sell the rubber plantation "Amelia," on the Acre river, the last crop of which amounted to 45,000 kilos of rubber, and which is of sufficient size to produce double the amount, new estradas being opened and worked. He will receive proposals at his office in the alley São Matheu 8.

Such advertisements refer to rubber lands which have been systematically laid out, and the rights to which are transferable, as property is in other countries. *Seringal* (plural *seringaes*) is the name applied to such an establishment; *estradas* are the paths cut through the forests to connect the trees assigned to each rubber worker; and *seringueiras* are the trees.

THE MERITS OF "POZELINA."

UNDER the heading "Great Discovery of the Century" the Pará daily journal *Folha do Norte*, of November 14 last, contained an advertisement of a preparation designed for use in rubber gathering, which the vendor calls "Pozelina." The merits claimed for the article are indicated in a portion of the advertisement which we translate as follows:

Rubber gatherers will find in this preparation a good means of preserving the *latex* in a fluid condition until the time of curing, and whether it has been collected one day or many days, the rubber produced will be of a superior quality. The preservation of *latex* with Pozelina renders unnecessary the practice of heating it before smoking, which is injurious on account of lessening the consistency and elasticity of the product. The use of Pozelina to keep the *latex* fluid causes it to retain all the desirable qualities.

It further appears from the advertisement that there are yet some scoundrels in the Amazon rubber fields who do not buy Pozelina, but they have their just deserts in being obliged to accept lower prices for their rubber. We continue the translation:

We desire especially to call the attention of rubber gatherers to our preparations, as some still prepare rubber without Pozelina, the only preparation that is recommended by manufacturing works, which latter send us testimonials, saying that they have found that rubber treated with Pozelina is given the preference in the markets, being valued 50 per cent. higher than other makes, which have been treated with substances invented by scoundrels to depreciate the national industry. It is time that the rubber tappers should learn to beware of waters and other liquids which deteriorate the milk, causing it to decompose, and which render the rubber of the very lowest quality, thus causing the foremost of our industries to suffer.

One fails to be impressed with the extent of the business done in Pozelina, since the advertisement mentions that it is sold only at the Drogaria Nazareth (Nazareth drugstore) in Pará. It would be a very exceptional drugstore that could afford enough material of any kind to apply to all the rubber production of the Amazon.

A WOMAN IN SEARCH OF RUBBER.

THE notable work of exploration which the late Henri Coudreau carried on for a number of years in South America has since been continued, with marked success, by his widow. Beginning in 1895, Monsieur Coudreau was employed by the state of Pará to explore the basins of several little known tributaries of the Amazon with a view to estimating the natural resources, including, of course, rubber. His work was well done, as indicated by the published reports, and it was likewise satisfactory to the Pará government. Upon his death, Mme. Coudreau, who had accompanied her husband on many of his expeditions, asked to be allowed to continue the work, to which the government assented. There have recently been published three volumes, devoted respectively to explorations of the rivers Curua, Mapuera, and Maycura—flowing into the Amazon from the north—made by Mme. Coudreau between November 20, 1900, and January 12, 1903. Besides being a fearless explorer of hitherto unknown regions, this lady is described as being able to make surveys and plot route maps, besides being an expert photographer. New rubber fields have been discovered, and the best means of reaching them pointed out, and altogether the work of Mme. Coudreau has proved so satisfactory that it seems likely to be continued, at the expense of the government.

THE TRUE HISTORY OF A WESTERN FARM.

IT often happens that the memory of a conspicuously successful man is assailed by the ignorant or prejudiced, and an unworthy motive attached to acts that deserve unqualified praise. Thus in the case of the late James W. Converse, the writer recently heard his great Grand Rapids enterprise characterized as a sharp trade with the Baptist church, followed by a lucky termination. What really happened was as follows:

The Baptist Missionary Society received as a bequest a farm at Grand Rapids, Michigan. Various committees were formed to examine the land and to sell it, but were unable to do anything. Finally Mr. Converse was one of a committee to look the farm over. He thought he saw an opportunity for its future development, which he frankly explained to the society, at the same time offering twice the amount of any previous offer. It was thankfully accepted. He then built a great dam at the river, laid out a town, putting in sewers and water, and began the arduous work of development. He got manufacturers to locate there, often furnishing the money for their enterprises, and finally made much money out of the venture. He did what the society had neither the ability nor the authority to do, nor did sharp trading or luck appear at all. It was simply a broad, generous, business transaction throughout.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

ONCE more the rise in price of raw rubber has put manufacturers under the stern necessity of adjusting quotations to correspond with the altered conditions. Unlike cotton, there are no estimates of the rubber crop to hand, showing figures indicative of a fall of prices in the immediate future. The decision to raise the price of goods was come to with remarkable unanimity in the trade, there being, I understand, only two dissentients who could not bring themselves to see the necessity or advisability of the move. To say that these two are instances of selfishness would be too strong an expression, as it might easily provoke the retort that the action of the majority is by no means based on altruistic principles. All the same it is permissible to express one's regret that complete unanimity could not have prevailed in a case the justice of which in the light of all the facts can surely not be disputed. The rise of 10 per cent. took effect on December 6, and applies to all manufactured goods, with the exception of thread, fine cut sheet, proofing, shoes, and asbestos goods, which, it is stated, are being separately dealt with. If proofing be excepted, it will be seen that the manufacturers of the other exempted goods are but few in number, and no doubt it is a comparatively easy thing for them to effect a combination for the purpose of regulating prices. Such a combination has long been in existence as regards elastic thread; with regard to the other classes of goods I am not at the moment in possession of any details, but it is evident that some sort of combination has been effected or is imminent? Of course in this matter, with a 10 per cent. rise agreed to by British manufacturers, foreign firms with houses in London find themselves in a strong position. They can either follow the lead of the British, in order to maintain a sound condition of business, or they may take advantage of the altered situation to cut in at a less rise than one of 10 per cent. The particular condition of the trade in the particular country represented will of course largely determine which procedure is to be adopted, though to judge by the pessimistic tone of the continental trade generally, it would certainly seem advisable for the foreign agencies to fall in line with the British manufacturers.

RISE IN MANUFACTURED GOODS.

THIS company, whose works are situated in Gibbon street, Bradford, Manchester, stands in rather a curious position with regard to its competitors in the rubber manufacturing trade. A year or two ago the company failed, after an active existence of many years. The principal creditors were firms who had supplied raw material, and it was decided among them, on the representation of a firm of raw rubber brokers who were the principal creditors, that the concern should continue to be worked for the benefit of the creditors. This has since been done, Mr. Middleton, a Manchester accountant, being the practical head of affairs. Under the new *régime* the company seems to have done well, and apparently as long as they can keep going the shareholders do not agitate for dividends. Of course I am not suggesting that everything is not fair and square in the present state of affairs, but from sundry grumbles which I have heard it would seem that approval of the course pursued is not general among the firm's competitors. It is argued that the non-necessity for the payment of a dividend puts the firm in an advantageous position in quoting for rubber goods. Whether this is so or not I cannot speak from inside knowledge, but I might suggest that the firm has a more decided advantage in being largely in the secrets of the rubber market by reason of its present constitution.

BROADHURST & CO., LTD.

So far as the rubber card is concerned, the manufacturers are grumbling a good deal at the high price of rubber. There is not that unanimity in this particular trade which is necessary to obtain a rise in price, so the consumers have not been troubled by the receipt of notifications of advance. Of course the price of rubber is all in favor of the progress of the cement card, which contains no rubber. I am probably not far from the truth in saying that that two-thirds of the output of card cloths to-day are of the cement variety. These are cheaper than the rubber cards, and for general purposes answer their requirements. In certain cases, however, the rubber card is still a necessity, and as far as one can judge its manufacture will continue to be carried on, whatever the price of rubber. As a sort of side issue of this manufacture it may be mentioned that the recovery of naphtha from the spreading machines is much more largely practised than in the case of the waterproof trade. The recovery plant is in regular use in all the works where it has been established, an average recovery of 80 per cent. of the solvent used being effected, a figure which must be considered very satisfactory. With regard to regular rubber works, the decline in importance of the rubber waterproof trade has caused naphtha recovery schemes to be left in abeyance.

CARD CLOTH MANUFACTURE.

AS an appendix to the last topic a word or two with regard to the solvent naphtha market may be added. As practically the rubber works are the only customers of the tar distillers for this product, it is not surprising that the latter are rather upset by the state of the waterproof trade, which has caused such a serious diminution in the demand for naphtha. In the ordinary course of tar works procedure, where crude naphtha is distilled for a variety of products, a certain amount of solvent naphtha is of necessity produced, and has to be sold at the best price obtainable. From 1*s.* 2*d.* to 1*s.* 4*d.* per gallon was the price about a decade ago, whereas to-day naphtha of similar quality can be bought for less than half these figures. The ordinary specification is for 90 per cent. of distillate at 160° C., though some rubber firms have a special specification to which they require rigid adherence on the part of the tar distiller. I think myself that too much importance is often attached to distillation figures; the temperature at which the last 2 or 3 c.c. come over, is in my opinion, an important point which the ordinary specification rather ignores. The figures obtained serve, of course, an indication of the presence or absence of heavy oil which is so undesirable in the majority of uses to which the naphtha is put. The use of shale spirit is almost completely confined to Edinburgh, which is in the immediate neighborhood of the chief shale distillation works. The penetrating smell of this spirit betrays its use at once. I was once asked by a Scotch waterproofer how I knew that he used shale spirit instead of ordinary solvent; my reply, of course, was that I smelt it some time before I arrived at the works. The smell is certainly a penetrating and to most people a disagreeable one, but barring this there seems nothing to be said nowadays against the product, as it is regularly supplied free from the heavy oil it used to so generally contain.

PRICE OF NAPHTHA.

ANALYSIS AD NAUSEAM.

OUR London contemporary in a recent innovation—the publication of replies to technical queries—strikes an important note with regard to the growing custom of analyzing rubber goods. I quite agree that it is possible for far too much importance to be attached to analytical figures, and all the more is this so when the analyst's knowledge of the subject is derived entirely from the text-book on the subject which has recently been published. This sentence must not be taken as reflecting at all upon the book, or the methods it contains; my stricture is concerned entirely with the way the book is used. From what has reached me from various masters of the trade, I gather that novices in rubber analysis have jumped to the conclusion that with the possession of this volume they are in a safe position—as safe in fact as those assayers who rigidly adhere to the proved methods detailed in their text books. It is safe to say that no such finality has yet been attained with regard to a great part of rubber analysis, therefore the analyst who is unable to supplement his figures with deductions derived from a knowledge of the trade, is liable to come to erroneous conclusions, and conclusions, moreover, which may have serious consequences for the rubber manufacturer. Apart from the academical question of correctness or otherwise in scientific method, it is a grievance of the trade that people buy very cheap goods and then report that they don't contain sufficient Pará rubber. It is suggested that only goods of a certain grade or price should be expected to pass the fiery ordeal of analysis. This seems only fair and reasonable, if it were generally acted upon. Of course it is entirely in the hands of the rubber manufacturer to stipulate as to whether he sells upon analysis or not, but in the present stress of competition it is not always easy for one firm to decide on a course which may put it at a disadvantage with its fellows. In saying what I have done about chemical analysis I have the best of reasons to approve of its use; it is only against its misuse that I enter a protestation. Since writing the above I have read the following sentence in a paper by G. Fendler in the *Gummi-Zeitung*: "Chemical analysis of rubber alone is not sufficient, but should go hand in hand with technical valuation, as the conditions resemble those in the valuation of wine, which cannot be determined by mere analysis." This sentence, I think, might with advantage be inwardly digested by those concerned who have shown such a disposition of late to pin their faith solely to analytical data.

NEW BOOK ON RUBBER.

THE volume on "The Cultivation and Preparation of Pará Rubber" by W. H. Johnson, F.L.S., is one that, in the light of our Editor's recent experience in Ceylon, can be more profitably reviewed by him than by myself. Judging from the introductory chapter it would seem that however great are the author's claims to be considered an authority on rubber plantation work in Ceylon, the Straits Settlements, and West Africa, he requires a good deal of prompting when he gets into the province of the rubber manufacturer. Novelists who introduce technical subjects into their manuscript are getting more and more into the habit of asking experts to correct their proofs. If this course had been followed by our author, it would not have gone out to the world that it was not until 1874 (which he gives as the date of the discovery of vulcanization) that the rubber trade began to make substantial progress. It seems to be somewhat of a moot point whether the high prices so far realized for Ceylon plantation Pará are in excess of the natural product, only so far as the content of moisture is less. The question as to the actual quality of the rubber when washed and sheeted does not seem to have been conclusively answered. Apart from this point it is important to note—if what a Ceylon planter told me is strictly accurate—that the plantation rubber could be sold, did necessity arise, at a considerably lower price than it now fetches in the market and still leave a substantial profit.

THE WEATHER.

THE severe weather which we experienced in November and which has again set in as I write, will no doubt be welcomed by the rubber boot and shoe dealers. It is a long time since sales commenced so early in the winter, January or February being rather our snowy months. Though the increase is not all a rapid one, it is noticeable that every year one sees more and more rubber boots about. The general complaint that they are clumsy and draw the feet is still heard on all sides, though the desire of keeping dry and warm in snowy weather, especially in towns where salt is liberally used, has been instrumental in overcoming the prejudices of many former detractors of the rubber boot.

THE ELECTRIC ENGINEERING INDUSTRY.

FROM all accounts this industry, which utilizes a considerable amount of rubber in one way or another, is in anything but a prosperous condition. There is a good deal of home as well as foreign competition, and an important point, too, is that most of the big tramway schemes for English towns have now matured and naturally a slump has occurred in this class of work. The bad report just issued by the British Westinghouse company, of Trafford Park, Manchester, showing a profit of only about £2000, has excited a good deal of comment in our technical journals, mainly because of the flourish of trumpets with which the invasion of Americans and American methods was heralded. The facts seem to be that the works have been laid out on too large a scale and work to keep them going has had to be obtained evidently at prices which show a loss rather than a profit. As far as can be gathered there is no truth in the report which got about to the effect that Dick, Kerr & Co., their principal competitors, were about to obtain a controlling interest in the Westinghouse company; the rumor however has had the result of raising the market value of the Westinghouse shares by about £100,000. In connection with a large tramway equipment contract recently given out in Great Britain, an American firm quoted far below any British competitor, so it would seem as if American methods worked all right on American soil, but not so successfully when their environment is changed.

ALMEIDINA GUM.

A REMARK in the November issue of THE INDIA RUBBER WORLD that interest in this body has not died out in the country of its production is much to the point. Producers and consuls are always ready to testify to the amount which is available. The question arises, however, who are the prospective purchasers. To the best of my knowledge those rubber manufacturers who were induced to give it a trial on a more or less extended scale found nothing in it to recommend a further purchase; moreover, since the advent of Pontianak gum in bulk there is even less reason to suppose that there will be any rush to buy Almeidina or "potato rubber," as it was generally termed in England, owing to its physical appearance. I note in Mr. Pearson's book that it is stated on the authority of Thomas Christy that the pungent vapor given off from this body when heated has no poisonous effect. Mr. Christy was the principal importer of this to London about twenty years ago, and no doubt this expression of opinion was the result of complaints made to him by rubber manufacturers to whom he had sold the gum. Though I never could find out the nature of the alleged poison there is every reason to suppose that the serious complaints made by the rubber workmen were justified and were not the outcome of imagination.

AFFAIRS OF THE DUNLOP TIRE COMPANY.

AT the eighth annual general meeting of shareholders in the Dunlop Pneumatic Tyre Co., Limited (London, November 25), Chairman Harvey Du Cros reviewed at length the company's history, present status, and prospects. The company had been formed to work a monopoly—a legitimate monopoly—under patents granted by the Crown and certified by high authority to be valid. The patents, indeed, had been sustained throughout their life, but the company had not been able to protect itself from infringements; there had been continual litigation, at great expense, which had not always resulted in the company's favor. Hence the expected monopoly had not been realized, so that, with respect to the large item of "good will" figuring as an asset, the company had proved to be largely over capitalized. Various measures had been proposed for the reorganization of the company, but none of these had met the sanction of the shareholders.

But the directors, early in the history of the company, foreseeing certain probable results, had adopted the policy of withholding large sums from the company's earnings instead of making the greatest possible distribution in dividends. During the first 18 months the company earned nearly £1,000,000, and enough had been earned every year to pay dividends upon the capital. But had all the earnings been paid out as dividends, the business must have come to an end upon the expiration of the patents, in 1904. Indeed, before such expiration, the company had found itself practically in the position of having no patents. Under a late judicial decision A could make one portion of their patented tire, and B could make a second portion, and neither would be an infringer; they could sell to third parties, who could assemble the parts, and thus evade prosecution by the Dunlop company, whose patents covered a combination of these elements.

The directors, however, had worked with a view to continuing in business, rather than making the largest possible distribution of dividends from each year's profits. At first the company had been in the position of middlemen—that is, buying goods from rubber mills and reselling them. The policy of retaining the earnings of the company to a very large extent had enabled them, through the formation of subsidiary companies, to become a manufacturing corporation, in a position to meet and resist competition, at home or from abroad. The chairman asserted that the company was now equipped with the largest and best plants in its particular field in the world. Through liberal writing off for depreciation of the manufacturing plants these now had a very low book value as compared with their actual worth, and he considered that the directors had achieved a great commercial success in creating a manufacturing business out of the earnings of the company.

The business of the company had been largely identified with the bicycle trade, which in late years had been passing through a crisis. He believed that the limit of depression had now been reached, and that an established trade in bicycle tires could be expected. In any event, the Dunlop company were in a position to get their share of the bicycle trade so long as any existed, but they had also large hopes in respect of the motor trade, which was rapidly developing in Great Britain. During the fiscal year ending September 30, the company manufactured 1,556,220 tires, which was a larger number than they had ever manufactured before, and larger, they believed, than had been manufactured by any other company. On account of the general reduction in prices, however, the year's turnover in tires had realized £83,000 less than the same product would have yielded at the prices of the preceding year.

Having reference to the sound financial condition of the subsidiary companies and their established position as rubber manufacturers, the directors felt that the company were on safe grounds as regards the future. Not only was this true in respect of the business at home, but the subsidiary companies in France and Germany—where there had never been any patent protection—had grown steadily, and promised to continue to grow.

The earnings in the preceding year, the chairman said, had been larger than had been anticipated. "I should explain to you," he said, "that the unexpected earnings of last year were due entirely to the extraordinary success that your patent process [the Doughty process] for manufacturing tires has achieved. We always expected it to be successful; but the longer it is in use the greater perfection it seems to achieve." There were reduced profits during the year lately closed, due to the higher cost of rubber and the cut in selling prices, but the benefits of the patent process had been shown in saving the company from a worse showing, and doubtless the chairman's confidence in speaking of the future of the company as manufacturers was based upon their possession of the Doughty patent.

As at present constituted, the capital of the Dunlop Pneumatic Tyre Co., Limited, is as follows:

Preference shares	£ 994,990	
Ordinary shares	999,993	
Deferred preference shares	1,999,850	£3,994,833

The original issue of £1,000,000 in 4 per cent. debentures has been decreased by purchase to £400,700. Ten per cent. dividends have been paid yearly on the preferred shares. The only dividends paid on the deferred preference shares were 10 per cent. in 1896-97 and 5 per cent. in 1897-98. Dividends on the ordinary shares have been as follows:

1896-97	8 %	1900-01	5 %
1897-98	8 %	1901-02	5 %
1898-99	0 %	1902-03	6 %
1899-1900	5 %	1903-04	2½ %

The company carry forward to the new year £241,406, against £235,541 last year. It is pointed out that £109,579, represented by the undivided profits of subsidiary companies, do not figure in this year's accounts, being retained for working capital. The item of good will now appears at £3,894,071, the reduction of which item was strongly urged in the annual report. The directors asked that the shareholders in the different classes get together and agree upon some form of reduction in the face value of their shares, and then they would approach the courts with a view of having it legalized.

BRITAIN'S DEPRESSED CYCLE TRADE.

DISCUSSING the British cycle industry *The Financial News* (London) says: "The fortunes of cycle companies are at a low ebb, and though some experts in the trade descry a better time coming, after next year, even they do not expect other than an unpleasant time in the coming year, and the hope of ultimate improvement is based rather upon the disappearance of a few companies in the meantime and the prosecution of rigid and successful economies among the survivors, than upon any prospect of bigger profits in the future."

The history of the past year in the trade has been one of general price cutting, which seems to have been inaugurated by the Swift Cycle Co., Limited. During the year previous to the last, prices were of a uniform and general character. The Swift company, however, not receiving from the public that support which they expected, decided to place upon the market in the middle of the season high grade Coventry-made bicycles at 8 guineas [=about $41], which was a very heavy reduction. At the annual meeting of the company (Coventry, November 30) Mr. Alfred Du Cros, who presided, said that he thought the company's policy had been justified by the result. The directors believed that the only basis upon which a Coventry cycle manufacturer could continue in business was by reducing the cost of manufacture to a minimum, and by placing the works in such position as would admit of a largely increased output. The company had, therefore, extended their works and acquired another factory near their premises. The Swift Cycle Co., Limited, as *The Financial News* puts it, "was one of the victims of the flotation mania of the middle nineties," and had done so badly that by 1901 reconstruction was necessary, in which the ordinary shares were cut down by 80 per cent.—from £200,000 to £40,000. Comparing the last three years (ending August 30), it appears that trading profits have been well maintained, and that dividends have been paid at the uniform rate of 6¼ per cent. on preferred and 10 per cent. on ordinary shares, while a substantial reserve has been maintained.

The company above referred to, however, by no means stands alone. For example, Rudge-Whitworth, Limited, whose cycles have had even greater popularity, have reduced their "Standard" cycle from 10 guineas (representing at that price an appreciable reduction upon previous figures) to £7 15*s.* [=$37.72]. Rudge-Whitworth, by the way, failed to make a favorable showing in the reports submitted at the annual meeting on October 31, when a fall in profits was shown from £34,310 for 12 months to £7235 for 11 months, the company's year now ending on July 31. The shrinkage of profits, the chairman asserted, "was almost solely due to the state of trade in South Africa." A shareholder at the meeting said that anyone concerned in the cycle trade who had observed the effect of the manufacture of motor cars on cycle companies which had taken up this trade would fully confirm the wisdom which they claim to have displayed in not embarking on either of its branches. Sir Henry Wiggin, Bart., in supporting the report, suggested that cycle manufacture should come together and tried to reach an arrangement to prevent the severe competition and the cutting of each other's throats.

The Premier Cycle Co., Limited, report trading profits of £70,263, compared with £77,126 last year, but the balance, after all deductions, including debenture interest, is only £4453, againt £19,275. *The Financial News* says: "This result is vastly better than that of two years ago, when the working produced a deficit of £7000, but it is clear that there must be a complete overhaul of the expenditure to bring it into some relation with the earnings."

Humber, Limited, date from March, 1900, being the result of the amalgamation of two companies which had ceased to be profitable. The capital is £500,000, in equal proportions of ordinary and 6 per cent. cumulative preference shares. It appears that no dividends have ever been paid on the ordinary shares, and that the preference dividend is 18 months in arrears. During the last fiscal year the net profits, available for dividends, amounted only to £1225. The directors, however, continue to manifest a lively confidence in the motor car industry, in which they embarked two years ago, and they apparently look for a revival in the sale of cycles, as a result of the reduced prices now prevailing.

The New Hudson Cycle Co., Limited, reports net profits for the past three years: £6077 in 1902; £8200 in 1903; £8118 in 1904. Preferred dividends have been paid, and for four years past, 4 per cent. on the ordinary shares. The company has been writing off "good will," and this year set apart £3000 as a nucleus for a general reserve.

The shareholders in the Raglan Cycle and Anti Friction Ball Co., Limited (Coventry, November 14), voted to wipe out £80,000 in "good will" by reducing the £1 shares to 6*s.* 8*d.* and to devote £22,000 in reserves and balance of profits to writing off for depreciation and further reducing "good will."

The Raleigh Cycle Co., Limited, reported net profits for the year ending August 13 last of £1501, which amount is carried over. Early in May a heavy cut in bicycle prices had been made by competing companies, but they decided to maintain prices, as the lesser of two evils, and their output had been smaller in consequence. The company hoped to enter the motor industry, with good results.

The following table illustrates the range of market quotations for shares in the preceding named cycle companies, for the past two and a half months—shares being of the par value of 20 shillings, except where otherwise noted:

	Low.		High.	
Dunlop, ordinary	5*s.*	4½*d.*	8*s.*	3*d.*
Do. preferred	11*s.*	1⅝*d.*	12*s.*	3*d.*
Do. deferred	1*s.*	3 *d.*	2*s.*	0*d.*
Humber, ordinary	1*s.*	9 *d.*	2*s.*	6*d.*
Do. preferred	6*s.*	0 *d.*	7*s.*	0*d.*
New Hudson, ordinary	13*s.*	9 *d.*	14*s.*	6*d.*
Do. preferred	15*s.*	9 *d.*	18*s.*	0*d.*
Premier, ordinary (4*s.* shares)		9 *d.*	1*s.*	6*d.*
Do. preferred (10*s.* shares)	4*s.*	10½*d.*	7*s.*	0*d.*
Rudge-Whitworth, ordinary	16*s.*	6 *d.*	22*s.*	9*d.*
Do. preferred	4*s.*	6 *d.*	5*s.*	0*d.*
Swift, ordinary	16*s.*	6 *d.*	18*s.*	0*d.*
Do. preferred	14*s.*	3 *d.*	14*s.*	6*d.*

THE STANLEY CYCLE SHOW.

LONDON has had only one great cycle show this winter, instead of two, as in former years. The twenty-eighth annual Stanley show was held November 18–26, at the Agricultural Hall, Islington. More than usual importance was attached to this show for the reason that the National Cycle Show—which hitherto was held at the Crystal Palace—has amalgamated with the Islington show, the control being entirely with the Stanley officials. One result was that a largely increased number of exhibitors applied for space, including many whose exhibits had been made in the past only at the National show.

The Stanley this year was still essentially a cycle show, though in each year, beginning in 1899, it has been representative of the advance in motor construction. More exhibitors of motors were represented this year than in any former year and a greater variety of cars were shown. The display in this respect doubtless would have been larger, but for an understanding between the management and the proprietors of another exhibition to restrict the number of motor cars.

The chief new feature of the Stanley show was the number of "tri-cars" exhibited, and the improvements which have been made in their design, finish, and control. The tri-car is a kind of hybrid which has a position between the motorcycle and the small car. It is three wheeled, steering with two wheels in front, and the single rear wheel taking the drive of the engine. The driver sits over the back portion of the machine, while the passenger is seated in a well-sprung basket between the front wheels. This type of motor has advanced

greatly in public favor during two years past, and has become a serious rival of the small car of 6 HP. or thereabouts. Some such machine shown weighed complete about 460 to 480 pounds, and were priced at £130 [=$650].

Hardly any changes were seen in pedal cycles. Alterations as regards motorcycles have mainly been directed toward the reduction of weight, in some instances the weight-cutting tending toward insecurity.

The number of rubber firms exhibiting was larger than for many years past, one reason for which is to be found in the increasing number of concerns making tires of the type protected formerly by the Dunlop (Welch) and Bartlett patents. The principles involved in these types were represented in almost every tire display in the show. The principal exhibitors of tires, and some of the exhibitors of tire accessories, named in alphabetical order, were as follows:

The Avon India-Rubber Co., Limited (Melksham).—Motor and cycle tires; Lovelace non slipping treads a specialty.

W. & A. Bates, Limited (St. Mary's, Leicester).—Beaded edge and wired on tires; repair accessories.

Bavarian Rubber and Asbestos Works (Munich, Germany).—"Metzeler" wired on and beaded edge tires, now introduced into Great Britain for the first time.

The Black Pneumatic Tyre Co., Limited (Glasgow).—"Clydesdale" and "Waverley" tires; the former made with Moseley's "flexifort" fabric.

Capon Heaton & Co., Limited (Stirchley, near Birmingham).—Beaded and wired on tires, including the Fleuss tubeless; pedal rubbers, cushion tires, etc.

Clifton Rubber Co., Limited (Birmingham).—"Wapshare" and "Clifton" tires, manufactured, under license, by the Doughty process; "Clifton" detachable inner tube.

Continental Caoutchouc and Guttapercha Co. (London, and Hanover, Germany).—Beaded edge and wired on tires for motors and cycles; cycle accessories, sporting articles, and mechanical rubber goods.

Dunlop Pneumatic Tyre Co., Limited (London).—Regular types of Dunlop tires, vulcanized by the Doughty patent process; inner tubes, repair outfits, and waterproof garments from the company's Birmingham factories.

Edlin Sinclair Tyre Co., Limited.—"In Equilibrio" wired on and beaded edge tires.

Hanover Rubber Co., Limited (Hanover, Germany).—Tires for cycles and motors; "Gloria" rubber belting for motorcycles; mechanical rubber goods.

J. E. Hopkinson & Co., Limited (West Drayton).—Hopkinson patent solid tire for motors; wired on and beaded edge pneumatic tires.

Hubbard's Patents and Tyre Syndicate.—"Constrictor" tires.

Imperial Tyre and Rubber Co., Limited (London).—Tires for motors, cycles, and motorcycles, with non skidding bands.

Le Pâris Tyre Co., Limited (London).—"Le Paris" and "Cuirasse" tires, made of special fabrics; detachable leather non skidding device for motor tires.

London and Manchester Rubber Co.—"Hammond" patent easy-fitting tire.

Charles Macintosh & Co., Limited (Manchester).—Motor, cycle, and motorcycle tires, under the firm's own brands, and also the brands of large customers, as "Humber," etc.; also rubber solution and repair outfits.

Midland Rubber Co., Limited (Birmingham).—Beaded edge and wired on tires, vulcanized, under license, by the Doughty process; inner tubes, repair outfits.

Michelin & Co. (Clermont-Ferrand, France).—Michelin pneumatic motor tires, exhibited by M. Wolff, their London agent.

David Moseley & Sons, Limited (Manchester).—Tires for cycles and motors; a specialty was Seddon's motor tire, of which the company are now sole manufacturers.

The North British Rubber Co., Limited (Edinburgh).—"Clincher" tires in four grades.

The Palmer Tyre, Limited (London).—Palmer "Cord" tires for motors, first exhibited at last year's show.

F. Reddaway & Co., Limited (Manchester).—Beaded edge and wired on tires, for cycles and motors; especially the "Camel" brand, with a special rim, and made either with or without inner tubes.

The Reilloc Tyre Co., Limited (London).—A new company; showed a new patented solid tire.

The Self Sealing Air Chamber Co., Limited.—"Hermetic" self sealing tire inner tubes.

Scottish Tyre, Limited (Edinburgh).—Beaded edge and wired on tires, made with "flexifort" fabric, and vulcanized, under license, by the Doughty process.

The South British Trading Co., Limited (London).—Motor tires of The Fisk Rubber Co., Chicopee Falls (Mass.), United States.

Shaw Motor Tyre Tread Co.—Leather detachable band for motor tires.

The Warwick Tyre Co., Limited.—"Warwick" and "Cambridge" tires, wired on and beaded edge.

EUROPEAN RUBBER SECRETS.

THE New York *Herald* (December 9) printed a communication signed "Rubber Goods Maker," the pith of which appears in the subjoined paragraphs:

What the rubber industry seeks and has sought for a good many years, is an article or substance which will combine perfectly with and vulcanize at the same point as the natural product, which will tend to preserve the rubber and add to its strength and wearing powers instead of weakening them.

Such a compound is in use in large establishments in Europe, and a company that will discover this secret (a difficult undertaking) and manufacture it in this country as a commodity for sale to the rubber goods makers has several large fortunes in the undertaking.

The foreign made tires, and, in fact, most rubber goods from abroad, are notoriously far superior to those made in this country, and the only reason is that the foreign manufacturers possess the secret of a better compounding material, which secret they probably will not divulge for the benefit of their competitors.

In a later issue of the *Herald* (December 13) a letter signed C. C. King, New York, corroborates the assertions made above. He goes further, and asserts that not only are the rubber goods made in any European country "better than ours," by reason of "the secret materials used," but the European manufacturers use cheaper grades of rubber than their competitors in America. All of which would indicate that Americans have yet a good deal to learn about the rubber industry.

An American rubber manufacturer, writing to THE INDIA RUBBER WORLD in regard to the above mentioned publications, adds: "If you happen to know Mr. C. C. King, ask him if he has ever seen any German make of steam hose working under pressure."

NOT SO GOOD AS IT MIGHT BE.—According to a British weekly paper: "Here is one little fact worth noting in connection with new rubber articles, tires or others. You will observe a whitish deposit, which you generally regard as proof of the superior quality of the substance; as a matter of fact, it is often a sign that the rubber is not so good as it might be."

SOME POINTS ON SHEET PACKINGS.

BY J. W. C.

IN cleaning up a rubber shop at inventory time, or other occasions more or less perfunctory, it is not an uncommon experience to round-up a lot of odds and ends in the form of "experimental" compounds, and surplus from completed orders, of varying costs and utility, and not infrequently representing a considerable money value. The best of it can be held against possible future orders, but the balance is of concern to the superintendent, for it surely ought to be utilized, and consequently, is consigned to that factory *terra incognita*, the "friction," or is worked up into cheap packing.

No doubt cheap packing has come to stay, in a sense, but it is unfortunate that, in the desire, and perhaps necessity to meet competition, it should frequently be necessary to use materials that to a degree represent a gamble with chance.

This desire to utilize all material that otherwise would be consigned to scrap, is much in evidence in factories where bicycle tires are made in quantity. Here trimmings of frictioned duck and muslins would accumulate, were they not successfully utilized in the manufacture of packings requiring a compact body or base. For this purpose the frictioned material is built into great slabs to a designated thickness and then cut into strips and reinforced on one or both sides by a layer of compounded stock. One enterprising superintendent, being unable to find a market for all this sort of packing, utilized the "friction" in the extensive manufacture of cement—"but that is another story."

Packing has a variety of functions: as applied to piston rods; to render a joint steam tight as in a manhole or handhole, and in pumps and pipe lines. The importance in sheet packings in the rubber manufacturing industry is evidenced by the large number of brands, each manufacturer apparently being ambitious to convince his customers that he alone has "the real thing."

The result is seen in innumerable fetching titles, and the employment of different colors. It is open to question, however, whether the particular color has any great significance in so far as quality is concerned, as the permanent popularity of any packing lies in the power of the compound of which it is composed to meet the requirements of its particular use. Thus a very cheap material, reinforced by plies of muslin or duck, as seen in the ordinary C. I. sheet, will answer every reasonable demand when used in low pressure steam lines or cold water joints. But even in this situation complete satisfaction is doubtful if joints are frequently broken, as it has no lasting qualities.

It follows, therefore, that for steam lines, or locations subject to high temperatures, quality and adaptation must be considered. Expansion and contraction are to be reckoned with; hence the packing that retains its elasticity the longest, although the more expensive, will prove the more satisfactory. With few or no exceptions there is no vulcanized sheet packing made that will not in time harden when subjected to continuous steam heat. The term "vulcanized" does not imply a cured packing. In fact, a sheet packing for steam joints, at its best is semi-vulcanized. It should be so compounded and cured as to retain its life, for unless it expands when subjected to heat, its value is questionable.

The experienced engineer, therefore, tests a packing before using it by holding a piece in the flame of a match. If it swells he may feel assured that it possesses at least one valuable quality. He will also see that all iron surfaces to be covered by the packing are perfectly clean, that the packing is cut to a perfect fit. When the packing is in form of a molded C. I. gasket that the splice is perfectly made; that the bolt holes "justify" exactly with the bolt holes of the joint or head. He will then screw up the bolts when cold, and turn on steam slowly.

These points, though small, perhaps, should be well considered, for live steam is a most insidious thing, and will find a defect if one exists.

The thickness of a pure gum or C. I. packing in a joint is important. It does not follow because a joint has large circumference that packing should be thick. The greater the surface presented to the steam, the more pronounced the action of the heat. When a packing becomes hard the greater is its liability to crack and blow out. It will be found, therefore, where the surfaces to be packed are perfectly smooth, that a packing up to $\frac{1}{16}$ inch in thickness will meet all requirements. On the other hand, for a rough joint, use $\frac{1}{8}$ inch, that there may be sufficient packing to fill all inequalities of surface and still make the joint perfect.

LITERATURE OF INDIA-RUBBER.

CELLULOSE, CELLULOSE PRODUCTS, AND ARTIFICIAL RUBBER. Comprising the Preparation of Cellulose from Wood and Straw; Manufacture of Parchment; Methods of Obtaining Sugar and Alcohol, and Oxalic Acid; Production of Viscose and Viscoid, Nitro-Celluloses, and Cellulose Esters, Artificial Silk, Celluloid, Rubber Substitutes, Oil Rubber, and Factis. By Dr. Joseph Bersch. Authorized translation from the German, by William T. Brannt. Philadelphia: Henry Carey Baird & Co. 1904. [Cloth. 8vo. Pp. xxi + 345. Price, $3.]

THIS book is noticed here because of the inclusion of the word "Rubber" in its title, and the high character of the house publishing it, rather than on account of any practical value it may have to the rubber industry. With respect to cellulose products it appears very full and practical, but the subject matter is for the most part foreign to the needs of American rubber manufacturers, whatever may be true in Europe. The 23 pages devoted to "rubber compounds" and "rubber substitutes," may, however, be read with interest by rubber men.

INSULATING MATERIALS IN HIGH TENSION CABLES. BY E. JONA, Chief Electrician of the firm Pirelli & Co. Milan: 1904. [Paper. 12mo. Pp. 45.]

A PAPER read before the International Electrical Congress at St. Louis in September last, and reprinted here in English and Italian. A summary appeared in the issue of this Journal for November 1.

THE COLORADO RUBBER PLANT. BY O. J. KENNEDY, SECRETARY Salida Board of Trade, Salida, Colorado: 1904. [Pamphlet. 8vo. Pp. 16. Price, 25 cents.]

A HISTORY of the discovery of the plant; information as to its culture, growth, and profits.

IN CURRENT PERIODICALS.

PLANTATIONS de Gutta-percha aux Indes Néerlandaises leurs Résultats. By Dr. P. van Romburgh. [Reprint of a recent official report.] *Revue des Cultures Coloniales*, Paris. XIII-132, 133 (September 5, 20, 1903). Pp. 137-142; 168-173.

Über die neue Guttapercha von Neuguinea [*Palaquium Supfianum*]. By R. Schlechter=*Der Tropenpflanzer*, Berlin. VII—10 (October, 1903). Pp. 469-471.

Multiplication des *Isonandra* (*Palaquium gutta*). By Charles Rivière.=*Journal d'Agriculture Tropicale*, Paris. III—28 (October 31, 1903). Pp. 291-293.

Gutta perchas from the Straits Settlements. [Analyses and reports on value; extraction of Gutta-percha from the leaves.]=*Bulletin of the Imperial Institute*, London. II-1 (March 31, 1904). Pp. 14-21.

Le Marché de Caoutchouc de Bordeaux. [From *Quinzaine Coloniale*, March 10].=*Revue des Cultures Coloniales*, Paris. XIV-146 (April 5, 1904). Pp. 202-203.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED NOVEMBER 15, 1904.

NO. 774,735. Wheel for vehicles [with pneumatic tire]. A. Boguslavsky, London, England.

774,790. Pneumatic tire. E. H. Seddon, Brooklands, England.

774,848. Nipple or mouthpiece. [The "Cup end" safety nipple for nursing bottles; described in THE INDIA RUBBER WORLD, June 1, 1904—page 311.] C. A. Lindsay, New York city.

775,009. Vehicle wheel [having inner and outer hubs, between which elastic cushions or balls are placed.] R. Lancaster and J. H. Lancaster, East Orange, N. J.

775,214. Flexible water bottle or pad. W. A. Galloway, Xenia, Ohio.

775,272. Vehicle tire [consisting of (1) a core of resilient material, having a longitudinal bore, forming an air cushion and space for the inward expansion of the material when subjected to pressure; and (2) an outer covering of wound wire strands wound spirally around the core in combination with (3) a rim having a spirally grooved channel corresponding to and fitting the strands of the tire to prevent the creeping of the latter]. R. S. Graham, New York city, assignor to W. M. Perkins, Brooklyn, N. Y.

Design Patent.

37,227. Water bag. A. C. Eggers, assignor to Goodyear's India Rubber Glove Manufacturing Co., both of New York city. *Claim.*—The ornamental design for a water bag, as shown.

Trade Mark.

43,693. Rubber sponges and brushes. Felix & Willis, Chicago. *Essential feature.*—The word FEATHEREDGE. Used since July 28, 1904.

ISSUED NOVEMBER 22, 1904.

775,361. Rubber tire [in sections, connected by a metallic core]. J. F. Byers, Ravenna, Ohio.

775,492. Pneumatic tire for vehicle wheels. A. R. Karreman and O. Del Guerra, Chicago.

775,753. Vehicle wheel [with elastic tire]. W. B. Keighley, Vineland, N. J.

775,824. Pneumatic tire [protected from punctures by a resilient metallic shield]. F. R. Keith, Randolph, Mass.

775,841. Cap for air valves for surgical cushions or the like. C. W. Meinecke, assignor to Meinecke & Co., New York city.

775,907. Fountain pen. A. B. Leib, assignor of one half to K. A. Chipman, both of Anderson, Ind.

Trade Mark.

43,741. Rubber tires. Jewell Belting Co., Hartford, Conn. *Essential feature.*—The word GEM. Used since Jan. 1, 1904.

ISSUED NOVEMBER 29, 1904.

775,989. Exercising apparatus. J. L. Roberts, Montpelier, Ind.

776,035. Tire [having puncture preventing concave steel plates within the tread]. W. C. Stokes, New York city.

776,047. Tire rim [adapted to the "Fawkes" cushion tire]. C. G. Fawkes, Denver, Colo.

776,101. Golf ball holder. W. B. Anderson, New York city.

776,108. Hoof pad. J. A. Buck and G. Hassler, New York city.

776,226. Weather strip for doors. T. E. Duncombe, Cleveland, Ohio.

776,372. Inhaler and sprayer. J. E. Anderson, Montezuma, Iowa.

776,440. Waterproof coat. A. R. Underdown, Haddonfield, N. J.

776,463. Vehicle wheel [with sectional rubber tire]. E. Gates, Modesto, Cal.

776,468. Fountain toothbrush [having a rubber bulb in the handle]. A. Hosmer, Fort Worth, Texas.

Trade Marks.

43,757. Rubber boots and shoes. W. F. Mayo & Co., Boston. *Essential feature* —The word VICTORIA Used since Sept. 1, 1902.

43,761. Certain named waterproof outer garments. The M. Lindsay Rubber Co., New York city. *Essential feature.*—The representation of a three bladed propeller in end view, across which is the word AGNOTA, the whole enclosed within a circle. Used since Aug., 1901.

ISSUED DECEMBER 6, 1904.

776,482. Pyrographic-pencil exciter. J. Anderson, Chicago.

776,544. Combination pencil sharpener and eraser. C. Payne, Los Angeles, Cal.

776,650. Pneumatic tire. C. E. Duryea, Reading, Pa.

776,656. Tire. [Cushion or pneumatic.] C. G. Fawkes, Denver, Colo., assignor to The Fawkes Rubber Co.

776,691. Device for grooving or tapping rubber or other sap-yielding trees. Cora A. Sanborn, Chicago.

776,697. Puncture plug for pneumatic tires. F. A. Sieverling, Kansas City, Mo.

776,772. Composition horseshoe. [Steel and rubber.] H. Bartley, Pittsburgh, Pa.

776,795. Composition horseshoe. [Steel and rubber.] G. J. Peacock, Buffalo, N. Y., and H. Bartley, Pittsburgh.

776,819. Attachment for vulcanizers. A. J. White, assignor to The Williams Foundry and Machine Co., both of Akron, Ohio.

776,824. Exercising apparatus. W. J. Bryon, Jr., New York city.

776,833. Dental vulcanizer. A. Goebel, Camden, N. J.

776,908. Artificial limb. S. J. Henry, Princeton, Iowa.

776,914. Truss pad. A. E. Johnson, Bloomington, Ill.

776,925. Soft-tread horseshoe. F. M. Miller, New York city.

776,951. Fountain pen. J. Sinnott, Chatham, Ill.

776,979. Vulcanizer. J. K. Williams, assignor of one half to The Williams Foundry and Machine Co., both of Akron, Ohio.

777,022. Horseshoe. I. G. Howell, Hopewell, N. J.

777,045. Process of covering golf balls by the use of plastic or Guttapercha strips. F. H. Richards, Hartford, Conn., assignor, by mesne assignments, to Perfect Golf Ball Co., a corporation of Maine.

Trade Mark.

43,815. Rubber balls. Lambertville Rubber Co., Lambertville, N. J. *Essential feature.*—The words HIGH FLYER. Used since Aug. 1, 1904.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1903.

** Denotes Patents for American Inventions.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 2, 1904.]

* 15,225 (1903). Pneumatic tire for bicycles and automobiles. R. A. Harris, Tucson, Arizona.

15,254 (1903). Head rest for attachment to baths. C. Rossdam, Berlin, Germany.

15,298 (1903). Cleaner for school slates. J. Thompson, West Hartlepool.

* 15,474 (1903). Golosh. A. J. Boult, London. (N. P. Bowler, Cleveland, Ohio.)

15,475 (1903). Dress preserver. A. J. Boult, London. (Trenckmann & Co., Schöneberg, Germany.)

15,483 (1903). Hot water bottle stopper. J. H. Nunn and G. Headworth, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 9, 1904.]

* 15,614 (1903). Means for setting rivets in treads for pneumatic tires. C. T. Adams, New York.

* 15,689 (1903). Pneumatic carpet cleaning device. J. S. Thurman, St. Louis, Missouri.

* 15,690 (1903). Air blast apparatus for cleaning carpets. *Same.*

* 15,857 (1903). Vibratory instrument for massage. A. J. Boult, London. (Personal Hygiene Co., Chicago, Illinois.)

15,866 (1903). Pneumatic tire. A. Boguslavsky, London.

15,905 (1903). Grip pad for printing and folding machines. J. Whitelegg, Manchester, and W. Houghton, Mouton.

15,913 (1903). Pneumatic multi-cellular tire. T. T. Vernon, Birkdale, Lancashire.

* 15,964 (1903). Inflating valve for tires. J. M. Willis, J. A. White, and W. O. Eddy (Hilton Valve Co.), Middlesboro, Massachusetts.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 16, 1904.]

* 16,128 (1903). Golf ball. [Gutta-percha shell, enclosing a spring core.] W. B. Thompson, Liverpool. (J. B. Marston, Cranford, New Jersey.)

16,338 (1903). Golf ball. [With inner core of box wood, provided with a ball race containing a number of steel balls, and wrapped with India-rubber, the whole being covered with Gutta-percha.] W. M. Short, Beckenham, Kent.

16,424 (1903). Apparatus for spraying disinfectants. A. C. A. Hutton, London.

16,506 (1903). Pneumatic roller or pusher. A. W. Turner, Calcutta, India.

* 16,567 (1903). Solid rubber tire. Raymond B. Price, Chicago, Illinois.

* 16,576 (1903). Apparatus for applying rubber vehicle tires. *Same.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 23, 1904.]

16,651 (1903). Device for removing metal foil from bottles. C. Berlt, London.

16,657 (1903). Razor strop. W. E. Bond, Twickenham.

16,686 (1903). Device for administering anesthetics. Dental Manufacturing Co. and V. Knowles, London.

16,753 (1903). Finger stall for printing press operators, and the like. J. Andersen, Christiana, Norway.

16,794 (1903). Device for detecting leakages in water, steam, and other pipes. W. Lynes, Sparkhill.

16,800 (1903). Golf ball [with core of glass or lead surrounded consecutively by aluminum, cork, and India-rubber, with an outer casing of Gutta percha; or these materials may be dispensed with and a solid compressed cork center used]. C. A. F. Gregson, Acocks Green, Warwickshire.

16,942 (1903). Door mats [of India-rubber or other material, in combination with laths and crossbars]. F. W. Croucher, Fleet, Hampshire.

* 16,982 (1903). Golf ball. P. M. Justice, London. (Cambridge Manufacturing Co., New York.)

17,098 (1903). Pneumatic tire. L. Azulay, Southwick, Sussex.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 30, 1904.]

17,156 (1903). Non-inflammable rubber solution. I. Frankenburg, Ltd., R. J. Frankenburg, and F. H. Betteridge, Salford, Manchester.

17,176 (1903). Protective cover for pneumatic tires. J. A. Mays, Hempstead, Middlesex.

17,187 (1903). Repair device for hose pipes. S. S. Bromhead, London. (G. Ewald, Cüestrin, Germany.)

17,210 (1903). Retaining means for resilient tires. C. T. J. Oppermann, Camden Town, London.

17,227 (1903). Hoof pad. J. H. Baylis, Croydon.

17,293 (1903). Surgical syringe. G. Pearson, Nottingham.

* 17,318 (1903). Golf ball. S. E. Page, London. (I. B. Kleinert Rubber Co., New York.)

* 17,340 (1903). Combined pin cushion and paper weight. C. L. Royer, St. Joseph, Missouri.

* 17,465 (1903). Pneumatic tire. H. E. Irwin, Galesburg, Illinois.

17,508 (1903). Bottle stopper [including rubber disc]. E. Ritsert, Frankfort o/M., Germany.

17,604 (1903). Pneumatic tire. A. Levert, Duisberg a/Rh., Germany.

PATENTS APPLIED FOR—1904.

Space is given here only to Applications for Patents on Inventions from the United States.

24,778. George F. Butterfield, London. Improvements relating to the vulcanization of rubber soles to boots and shoes. Nov. 15.

24,891. F. C. Brown, London. Improvements in fountain pens. Nov. 16.

25,091. A. M. Flack, London. Improvements in fountain pens. (James W. Williams, United States.) Nov. 18.

GERMAN EMPIRE.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

235,837 (Class 30*d*). Elastic woven double tube catheter. Rusch-Compagnie, G. m. b. H., Cannstatt. Oct. 26.

235,838 (Cl. 30*d*). Elastic woven nose douche with forked outlet. *Same.* Oct. 26.

235,436 (Cl. 64*a*). Bottle stopper. A. Schenke. Oct. 26.

235,499 (Cl. 71*a*). Laced shoes with rubber side pieces. Frau M. Wolff, Pirasens. Oct. 26.

236,336 (Cl. 63*c*). Tire inner tube, with ends held together by a sleeve. Continental Caoutchouc- und Gutta-Percha-Co., Hannover. Nov. 2.

236,545 (Cl. 30*d*). Catheter of soft rubber. Rusch-Compagnie, G. m. b. H., Cannstatt. Nov. 9.

237,118 (Cl. 30*d*). Ice bag for the neck. Dr. A. Löwenstein, Elberfeld. Nov. 9.

236,595 (Cl. 39*a*). Porcelain model for seamless sheet rubber nursing bottle nipples. S. R. Wolff & Co., Wevelinghoben. Nov. 9.

237,119 (Cl. 30*d*). Ice bag for the neck. Dr. A. Löwenstein, Elberfeld. Nov. 9.

236,802 (Cl. 64*a*). Bottle stopper, having a rubber packing disk covered by a cork. Holzapfel & Co., Altona-Ottensen. Nov. 17.

236,809 (Cl. 64*a*). Bottle stopper, containing a perforation and a rubber disc serving as a back-pressure valve. W. Rosenberg, Hamburg. Nov. 17.

236,857 (Cl. 71*a*). Laced and buttoned shoes with rubber side pieces. J. Laumbacher. Nov. 17.

APPLICATIONS.

25,932 (Class 77*a*). Indoor gymnastic appliances consisting of an arrangement of elastic cords. Industriewerke für Heilgymnastische Apparate Maschinen und Metallwaren, G. m. b. H., Solingen. Nov. 9.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

344,077 (June 16, 1904). J. de Raguet de Brancion. Anti-skidding device for tires.

344,267 (May 11). P. Augeyrolle and F. Rey. Pneumatic tire protector.

344,423 (June 29). The Hartford Rubber Works Co. Device for attaching elastic tires to vehicle wheels.

344,468 (June 30). A. Beaujon. Protective and anti skidding cover for pneumatic and other tires.

344,502 (July 1). Hell, Leeson and the County Chemical Co., Limited. Portable device for vulcanizing and repairing automobile tires.

344,518 (July 1). A. Smolikowski. Closed rubber tubes for elastic tires and for other purposes.

344,734 (July 9). A Kittel. Process for reclaiming vulcanized rubber waste.

344,827 (July 16). J. Birtwisle. Improvement in pneumatic tires.

344,828 (July 16). Latay et Cie. Protective band for pneumatic and other tires.

344,888 (June 24). Bouchet & Jalabet Co. Anti skidding tire protector.

344,898 (July 9). J. Chambet. Tire for bicycles, motorcycles, and automobiles.

245,020 (July 22). P. F. E. Christiæns. Process and apparatus for treating rubber *latex*.

345,042 (July 1). G. H. and A. E. Sherman. Pneumatic tire.

345,059 (July 23). R. M. Meyer. Pneumatic tire cover for automobiles.

[NOTE—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, post paid.]

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for October, 1904, and for the first ten months of five calendar years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
October, 1904.....	$ 77,671	$133,408	$ 197,263	$ 408,342
January-September .	647,245	844,802	1,779,256	3,271,303
Total.....	$724,916	$978,210	$1,976,519	$3,679,645
Total, 1903....	710,825	790,903	1,855,756	3,592,591
Total, 1902....	596,272	865,711	1,659,205	3,121,188
Total, 1901...	502,264	733,329	1,470,176	2,705,769
Total, 1900 ...	443,039	526,878	1,260,961	2,231,778

Imports of rubber goods (in value) have increased at a relatively higher rate: In the last 10 months; $873,788; same months 1903, $589,270; same months in 1902, $461,574. Increase this year over last, 48 per cent.

SMALL BEGINNINGS OF A COMING (?) GREAT INDUSTRY.

THE illustration which appears on this page results from photographing a specimen plant mailed to THE INDIA RUBBER WORLD by Mr. George Leonhardy, of Denver, Colorado, who was mentioned in the November 1, 1904, issue of this Journal (page 36) as one of the incorporators of the Riverside Crude and Refined Rubber Co., with $1,000,000 capital, authorized "to gather the plant and manufacture the rubber therefrom." The specimen referred to measures exactly 13½ inches from the flowers at the top to the lower extremity of the root as shown in the illustration, from which statement an idea may be gained of the diameter of the root sections, which are stated to be the only rubber producing portion of the plant. From a Denver periodical, *The Conquest*, also sent by Mr. Leonhardy, the following paragraphs are extracted:

THE COLORADO RUBBER PLANT.
[Photographed from a specimen sent by Mr. George Leonhardy, of Denver.]

"*Actinella Richardsonii*, sometimes called *Picradenia floritunda utillis*, belongs to the *Actinella* family, of which there are a number of different species. It is found in Chaffee county, Colorado, at an altitude of from 7500 to 9000 feet. It is a shrub from 6 to 16 inches high, which, when in bloom, has a small yellow blossom resembling in appearance and odor the camomile blossom. The rubber is extracted from the root of the plant. It yields from 10 to 20 per cent. of rubber. The highest percentage is obtained in the fall of the year, after the seed has ripened and the sap in the plant has returned to the root. The plant above the soil has a very small percentage of rubber. While it has been reported that the plant has been found in many localities in the state, Mr. George Leonhardy says he has so far not met with it in any other locality except as above stated. It is also reported that there have been other plants found in Colorado yielding rubber, a number of such plants having been sent to him for investigation, in all of them he has failed to find rubber. The rubber obtained from the plant has been thoroughly tested and is found to be equal and in some instances superior to the Pará rubber.

"By cultivation the plant increases in size and improves in quality, yielding a large percentage of rubber. The plant can be cultivated from the seed, or from transplanting of the root.

"Mr. Leonhardy has invented a process for extracting the rubber by disintegration. So rapid and efficient is this process that an ordinary gasoline stove and common kitchen utensils can be used successfully for laboratory purposes. No plant for the production of rubber on a commercial scale has been attempted as yet, owing to the transition state through which the industry is passing. The increasing demand will undoubtedly make a factory of large capacity a necessity in the near future. The present crude apparatus used by Mr. Leonhardy in preparing samples of manufactured rubber in a laboratory way can be enlarged to produce merchantable rubber on a commercial scale."

* * *

THERE is still another Colorado rubber company in the field. The Salida Crude Rubber Co. was organized on December 5, at Salida. Franchises were granted to the company and a building was donated by the citizens and business men, with the idea that a factory would be in operation by January 1, with a capacity for treating 10 tons of the rubber weed daily, by "an entirely new process." The principal organizer of the company is Harvie Du Val, who is variously described as a wealthy lawyer of Santa Fé, as having made a fortune in Louisiana lumber before coming west to invest in mines, and as having been interested in some very successful ventures in the rubber industry in South America. Mr. Du Val is said to be backing the enterprise with personal capital, together with that secured from Florida and New Mexico parties, and does not hesitate to say that he already has enough money at hand to give the proposition a thorough test. Associated with him is Ben F. Spencer, one of the original discoverers of the Colorado rubber plant, who accidentally came across it in 1902, while at work "quite a distance from water." Becoming thirsty, he began to chew on the first plant within reach, when he found it to contain rubber. "By chewing and saving he had a piece as large as a hen's egg by the time he left for Denver," according to a pamphlet on "The Colorado Rubber Plant," by Mr. O. J. Kennedy, secretary of the Salida Board of Trade, who does not hesitate to add: "From this accident we now have probably one of the greatest industries in the age started." Mr. Spencer at one time was under contract with the Continental Crude Rubber Co., but "succeeded in proving to the courts that the Continental company had not fulfilled their agreements with him, and the contract was forfeited. Thereupon Spencer and DuVal joined hands and secured the coöperation of R. D. Main, of Buena Vista, together with his patented extraction mill. The Salida *Record* says:

This machine merely consists of an inner cylinder revolving against an outer one, and in the space between the root pulp will be ground and masticated all the time, covered with hot water containing a very small portion of a certain chemical. As this process goes on, under the influence of the chemically charged hot water, the gum gradually precipitates

together and as it sinks to the bottom and is taken out the crude rubber will be found to be in roll shaped pieces, sometimes an inch or more in diameter and from 3 to 5 inches in length.

The Salida paper further says that "the cultivation of and the extraction of rubber from the Colorado rubber weed are two subjects which are and have been for months past foremost in the mind of scientists and rubber dealers all over the world. - - - There is no doubt that the state has given birth to a new industry which may excel any other interest."

And Mr. Kennedy, above mentioned, writes to THE INDIA RUBBER WORLD:

We believe a new industry has been born. Everything has a beginning, all things were once small, all things start from tiny initial point. Had we "set down" on new things during the past, we would to-day be walking around killing our game with a club and wearing breech clouts.

The Denver *News* says of the Colorado rubber district: "Salida is the most natural center for this territory, and it is the desire of the board of trade to make it a manufacturing center for the rubber industry. - - - The board has now in its possession the only available seed in the world." In a later issue the same journal says: "It has been demonstrated that there are mills which can produce a very fine quality of the rubber and

THE TRUE DISCOVERER OF COLORADO RUBBER.

[The Inquisitive Lamb that Sacrificed its Life in Investigating its Properties.]

there is a standing offer from the Salida board of trade of 70 cents to $1 for every pound of rubber produced from the plant."

* * *

THE true story of the discovery of rubber in Colorado is related at length in an article signed by C. F. Carter and "syndicated" to a number of newspapers, including the Brooklyn *Daily Eagle*, which published it on December 18 last. The salient feature of Mr. Carter's article is the following paragraph, in connection with which we reproduce from the *Daily Eagle* a very informing illustration of the ill-fated lamb:

"The plant is the first green thing to be found in the spring, and for that reason is eaten up by sheep when they are permitted to get at it. But the sheep men found that their sheep grew weak and emaciated and finally died after feeding on rabbit weed. It never occurred to any one to ascertain the manner in which the weed produced the fatal effect until Myron G. Brownell, a Denver real estate man, visited a friend engaged in the sheep business near Buena Vista. The friend had a valuable ram that had carelessly been permitted to browse on rabbit weed, and a couple of weeks later died with the usual symptoms. At Mr. Brownell's suggestion a *post mortem* was held on the ram. The stomach was found to be filled with pellets of a black gum. This gum was perfectly indigestible, and so had caused death. Mr. Brownell had some of the substance examined by a Denver chemist, who said it was rubber."

* * *

IN response to many inquiries received by THE INDIA RUBBER WORLD as to the product of the plant above referred to, it may be said here that the specimen photographed for the accompanying illustration would appear to be equally fitted to yield rubber or gooseberry wine or counterfeit money. The Editor has not yet found an opportunity, however, to test its rubber properties, either by chewing it as an antidote to thirst, on a western prairie, or by undergoing the experience of the dying lamb shown in the second illustration herewith.

THE HORN COMB INDUSTRY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to the article in your December 1 issue (page 100), on "An Old Comb Factory Closed," may add that, according to Coffin's "History of Newbury," the manufacture of combs was established in Newbury (now West Newbury) by Enoch Noyes, in 1759. Mr. Somerby N. Noyes, whose death you reported, sustained the same relation to Enoch Noyes as ourselves—*i* great grandsons. His mother and our father were sister and brother.

David E. and William, grandsons of Enoch, made many important improvements in machinery for making horn combs. The firm of S. C. Noyes & Co., composed of S. C. Noyes, Hayden Brown, William Noyes, and S. N. Noyes, in 1859, were the first to make a success of making rubber fine tooth combs, William Noyes taking out a patent in that year for a machine for sawing the teeth in fine combs.

Somerby N. Noyes was the only survivor of the firm of S. C. Noyes & Co., and he sold out his business to us before his death—on October 22, 1904—the machinery to be delivered after he had finished up the stock in process, which he did the week before his death.

The combs made by Mr. Noyes and ourselves are all made from steer horns, which come largely from South America, via Europe. There are to-day only five factories that we know of that are making horn combs: Jacob W. Walton Sons, Philadelphia; David H. Graham, Lancaster, Pennsylvania; Joseph P. Noyes & Co., Binghamton, New York; and G. W. Richardson Co., and ourselves in this city.

In regard to the importance of the horn comb trade to-day, as compared to its past importance, we would say that, in our opinion, while years ago there were a good many places where horn combs were made, the larger part of them were small, although we think the total number of dressing combs made was bigger than to day. In Leominster, Massachusetts, where horn was formerly used for fancy combs worn by the ladies, celluloid has taken the place of horn, although the Leominster Directory gives 22 workers of horn, which really means makers of hair pins, which take practically all the horns that are produced in this country. The introduction of rubber as a material for combs has had the effect to make the price of combs cheaper. The use of horn for hair pins, together with the dehorning of a large per cent. of cattle in the West, has made the price of horn very high.

Regarding the comb makers' trust, which some of the newspapers mentioned the late Mr. Noyes as having been the head of, we know nothing of any such organization. Yours very truly,

W. H. NOYES & BRO. CO.,
M. B. NOYES, Secretary.

Newburyport, Massachusetts, December 6, 1904.

SAMUEL B. THORP, a member of the firm of W. H. Noyes & Bro. Co. since 1887, died at his home in New York on December 8, aged 59 years.

SOME RUBBER INTERESTS IN EUROPE.

ADVANCE ON RUBBER GOODS IN GERMANY.

A MEETING of rubber goods manufacturers, for the purpose of discussing the perplexing condition of prices, was held at Berlin on December 2. Thirty-one factories were represented by 33 persons. Herr Director Hoff (Harburg a/d Elbe) opened the meeting at 10.15. The condition of the rubber industry and measures for its improvement was the subject to be discussed. After a preliminary review of the high prices of raw rubber, the necessity of advancing prices of rubber goods was recognized, and the following resolutions passed:

For technical articles of soft rubber a commission to establish the minimum prices, was formed, viz.: Vereinigte Gummiwaren-Fabriken Harburg-Wien, Harburg a/E.; Franz Clouth, Rheinische Gummiwaren-Fabrik m. b. H., Cöln-Nippes; Vereinigte Hanfschlauch- und Gummiwaren-Fabriken zu Gotha, A.-G.; Hannoversche Aktien-Gummiwaren-Fabrik, Hannover; Asbest- und Gummiwerke Alfred Calmon, A.-G., Hamburg; Aktiengesellschaft für Fabrikation Technischer Gummiwaren C. Schwanitz & Co., Berlin.

For surgical articles of soft and hard rubber a commission consists of Hannoversche Gummi-Kamm-Compagnie, A.-G., Hannover-Limmer; Gustav Wellmann, Hannover-Hainholz; Leipziger Gummiwaren-Fabrik, A.-G., vorm. Julius Marx, Heine & Co., Leipzig; Phil. Penin Gummiwaren-Fabrik, A.-G., Leipzig-Plagwitz; C. Müller, Gummiwaren-Fabrik, A.-G., Berlin.

For gummed stuffs, a commission consists of Vereinigte Gummiwaren-Fabriken Harburg-Wien, Harburg, a/E.; Continental Caoutchouc- und Guttapercha-Compagnie, Hannover; Mannheimer Gummistofffabrik Rode & Schwalenberg, Mannheim.

The commissions have the privilege of adding to their numbers. It is also anticipated that an agreement among the factories on erasing rubber will be formed. In order to come to an agreement with the Verband Deutscher Asbestwerke, G. m. b. H., Frankfurt a/M., negotiations will be entered into with the representative of that organization.—*Gummi-Zeitung, December 9.*

A CONSUL ON THE GERMAN RUBBER INDUSTRY.

THE American consul general at Berlin, Mr. Frank H. Mason, reports to his government that the rubber industry in Germany is in a state of depression out of all proportion to the general industrial depression in that country. Not that there has been any decline in the demand for rubber goods of every kind; on the contrary, there is a steady increase in the consumption of such articles. The critical situation is due mainly (1) to the greatly increased cost of crude rubber and (2) to overproduction, resulting from an injudicious increase in the number and capacity of rubber factories since 1899. A third cause is the fact that during two or three years past several large electrical manufacturing companies, which previously were large consumers of rubber supplies, have, in the interest of economy, entered upon the manufacture of their own requirements in such goods. In view of the overproduction, manufacturers have not been able to force up the selling prices of their product in keeping with the increased cost of raw materials. Efforts made to form a trust or selling syndicate to control the output and fix prices have failed, owing to the refusal of so many manufacturers to act in the matter. It is mentioned that such a syndicate, or *kartel*, was readily formed in Austria, where only a few rubber factories exist. Mr. Mason reports: "The German rubber manufacturers charge that the high cost of crude Caoutchouc is due almost wholly to manipulation, especially in England, where a few powerful firms are able to control the supply and fix prices for the whole of Europe." It has been urged, therefore, that the Germany manufacturers should strive to emancipate themselves from the English Caoutchouc market by establishing direct relations with original sources of supply.—[It might be pointed out that of the crude rubber imported into the United States during the last fiscal year, 56 per cent. was imported direct from Brazil and only 13 per cent. from England. Yet manufacturers paid practically the same prices as were paid in Germany. There is needed further proof that rubber prices are fixed in Liverpool; indeed, it is strongly asserted there that the "manipulation" is carried on in New York.—THE EDITOR.]

THE SILVERTOWN COMPANY'S REPORT.

THE report of the India Rubber, Gutta Percha, and Telegraph Works Co., Limited (London), for the business year ended September 30, shows gross profits of £119,010, against £196,097 for the preceding year, and £163,725 in 1902. The company wrote off £21,059 for depreciation against £46,150 last year, but that was an exceptionally large figure and the year was one of good profits. The amount carried forward this year is £52,274 against £56,930 last year. The dividend for the year is 5 per cent., this being the first time that it has fallen below 10 per cent. The general business of the company shows an increase when compared with last year; but, unfortunately, the sales have been made on a rapidly rising market for raw material, and the selling prices of manufactured goods have not proportionately increased. Moreover, the revenue for the year has been charged with amounts expended on the development of a new business which has not yet reached a remunerative stage. These two causes account for the serious falling off in revenue, but the directors think that the revenue for the current year will not be injuriously affected to a like extent. The *Dacia* and *Buccaneer* have been employed in cable repairing work during the year, and these two vessels are at present under charter. The works at Silvertown and Persan (France) have been maintained in their usual state of efficiency, and extensions continue to be made. In April last the board made an issue of £100,000 second debentures, which has increased the yearly interest charge from £12,000 to £14,250. Following the appearance of the report the quotation of the £10 shares, which as a rule varies little, fell from 18½ to 17¾, but the latter figure indicates how little the market is disturbed by what may be regarded as a mere temporary decline in the company's prosperity.

RUBBER INSULATED CABLES FOR CUBA.

HOOPER'S Telegraph and India-Rubber Works, Limited (London), on November 19, shipped 470 nautical miles of submarine cable, insulated with "Hooper's core" (India-rubber), to be laid by the Cuba Submarine Telegraph Co., Limited, between Cienfuegos and Santiago (420 miles), and for repair work on existing cables in Cuban waters. The first Cienfuegos-Santiago cable was made at the Hooper works in 1875 and lasted 28 years, until last year. In 1881 some sections of deep sea cable remaining at the Hooper works (made in 1873) were spliced into a cable which was laid between Cienfuegos and Santiago, under a twelve years' guarantee. [See THE INDIA RUBBER

WORLD, October 15, 1893—page 3.] It worked without accident for ten years, and with repairs worked for six years longer, when the sheathing became worn out. The Hooper works have also built for the Cuba Submarine Telegraph Co., Limited, 481 miles of rubber insulated cables, as follows: Cienfuegos-Batabano—two cables (1891 and 1894); Santiago Cape Cruz (1897); Cape Cruz-Manzanillo (1897).

NEW PEGAMOID, LIMITED.

AT the third annual meeting (London, December 7) the chairman, Mr. Andrew Haes, stated that there had been an increase in trading, and larger gross profits than in any preceding year, though on account of increased expenses net profits had been smaller. Several travelers have been employed, the result of whose work was to be expected in future profits. The company had not been obliged to pay the high prices for camphor ruling during the year, on account of having held large supplies, and they expected to benefit largely from the reduction in cotton prices which lately set in. The company were making leather cloth suitable for railway carriage seats and other upholstery work; sheetings for waterproof carriage rugs and wagon covers; Pegamoid colors and paints, and "a particular class of goods which are much used by the medical world." An item of £8008 in the balance sheet represents the cost of the shares in the Continental Pegamoid, which this year paid a 2½ per cent. dividend, and is reported to be doing fairly well and increasing its business.

GERMAN DUTY ON RUBBER HOOFPADS.

THE Prussian minister of finance has, in accord with the Imperial chancellor of customs, decreed, under date of October 27, 1904, that hoofpads of soft rubber, with pressed patterns, which are placed under the shoes of horses, and covering the sole of the hoof wholly or in part, are to be subject to a duty of 60 marks per 100 kilograms [=about 6⅛ cents per pound]. The patterns embossed, or pressed, on those goods in the form of ribs, points, or stars, for the purpose of preventing slipping of the horses, must be considered as stamped designs, the word design embracing all possible surface patterns, no matter whether they are intended for ornamental or practical purposes.

RUBBER SHOE PRICES IN GERMANY.

A PRICE convention has been organized by the Vereinigte Gummiwaaren-Fabriken, Harburg-Wien, and the Asbest- und Gummiwerken Alfred Calmon, Aktiengesellschaft (Hamburg), relating to their output of rubber footwear. The *Gummi-Zeitung* expresses the hope "that this definite combination may for a long time to come, assure the profitable coöperation of the two companies."

GREAT BRITAIN.

THE Rubber Chemical Co., Limited (Birmingham), on account of the increasing demand for their reclaimed rubber and "Seringa" brand of chemicals for the rubber industry, have been compelled to remove to larger premises, and are to be addressed in future at Seringa buildings, Ludgate Hill, Birmingham.

=THE INDIA RUBBER WORLD'S correspondent writes: "A works has recently been established at Willesden, near London, for the manufacture of a new rubber like substance named Camphalte. So far I have not seen any of the product, which by its title suggests the use of camphor, but hope to make its acquaintance before long. The managing director of the new concern is Mr. Stewart Campbell, the address being 9, Hythe road, Willesden Junction."

=Mr. Louis Hoff, managing director of Vereinigte Gummiwaaren-Fabriken, Harburg-Wien (Harburg a/d Elbe, Germany), on the evening of November 23 invited the staff of the London branch to a banquet at the Hotel Cecil, when the chief clerk, Mr. H. Wohliebe, received a diploma and medal commemorating 25 years' service. The present of a check from the company was included, and also a gold watch subscribed for by the staffs in London, Harburg, and elsewhere.

GERMANY.

VEREINIGTE Gummiwaaren-Fabriken, Harburg-Wien, are actively exploiting their new rubber sponges, based upon their patent, described in THE INDIA RUBBER WORLD, June 1, 1903 (page 301).

ITALY.

PIRELLI & Co. (Milan) announce the award to them, at the St. Louis World's Fair, of a grand prize for rubber goods and two gold medals for insulated wires and cables. Special medals were awarded to their factory superintendents, Emilio Calcagni and Francesco Piazza, and their secretary, Carlo Fratino; also, a gold medal to their chief electrician, Emanuele Jona, for a paper on "Insulating Materials in High Tension Cables," read before the International Electrical Congress. The capital of Pirelli & Co., it is reported, has been increased from 5,500,000 *lire* to 7,000,000 *lire* [=$1,351,000].

NEW TRADE PUBLICATIONS.

BOSTON WOVEN HOSE AND RUBBER CO., have issued a new General Catalogue, comprising eleven department catalogues, several of which have received notices at different times in our pages. In the statement of its purpose the catalogue is simple and direct in tone, and it is well printed and illustrated. There is not only an enumeration of the products of the company's factories, but much detailed information bearing upon the quality of goods and the considerations to be kept in mind by customers in purchasing, which details are fittingly supplemented by the illustrations. To indicate the completeness of the catalogue, it may be mentioned that 10 pages are devoted to Fruit Jar Rings alone. The first position in the catalogue, however, is given to Belting, and next importance is the department relating to Hose. Packings, Insulating Tapes, and Molded Goods are also given prominence. The various department catalogues may still be obtained separately. [5¼″ × 7¼″. 194 pages.]

THE catalogue of "Automobile Garments and Requisites" issued by the great New York drygoods store of SAKS & CO. deserves to be mentioned in a list of rubber trade publications on account of its including so many waterproofed articles. Among the articles to which the numerous handsome illustrations relate are included many styles of coats for men and women, ponchos, couverture pantaloons, lap and foot robes, caps, hoods, and the like, the whole indicating that in connection with automobiling an important new field has been developed, in America as in Europe, for rubber in waterproofing. [5¼″ × 8¼″. 272 pages.]

THE excellence and completeness of the fifth edition of the illustrated price list of the LEIPSIZER GUMMIWAAREN- FABRIK AKTIENGESELLSCHAFT, vorm, Julius Marx, Heine & Co. (Leipsic, Germany), were commented upon at length in these columns promptly upon its appearance. We have also mentioned a French edition of the work, being a complete translation, without abridgment. The same completeness characterizes an English edition, in which 170 pages are devoted to the list proper; 149 pages to illustrations of the articles referred to; and 25 pages to miscellany, the pages measuring 7½ × 10 inches.

FACTORY OF THE COMBINATION RUBBER MANUFACTURING CO. (BLOOMFIELD, N. J.)

THE NEW COMBINATION RUBBER COMPANY.

THE Combination Rubber Manufacturing Co. (Bloomfield, New Jersey) are operating one of the historic factories of the United States. It was started by John Greacen, one of the pioneers of the business. For many years, although the factory buildings were old fashioned and the machinery hardly up to date, a safe and profitable business was carried on, the firm name being the Combination Roll and Rubber Co. Later the Greacen heirs sold their interests and the Combination Belting and Packing Co. was incorporated, when a fine new factory was erected and equipped with up to date machinery, all of which is inherited by the present company, The Combination Rubber Manufacturing Co.

The "new factory" is a fine four story brick building of mill construction, 60 × 150 feet. The ground floor is in part a store room for rubber and other supplies, the upper stories being used as follows: The second floor for offices, sample room, shipping, etc.; the third for belting, and the fourth for hose; while above there is a spacious attic, which has been admirably fitted up as a drying room for crude rubber.

The belting department is equipped with everything necessary to turn out a full line of rubber belting, including a duck slitter, belt making machine, Singer belt stitcher, a vulcanizer 8 × 12 feet, a Farrell belt press 34 feet by 60 inches and so on. In the hose room are a hose making and wrapping machine, a 55 foot vulcanizer tubing machine, etc.

Most of the heavy machinery is set in the old mill, which adjoins the new one. For a power plant there are three boilers: One 300 HP. Hazleton; one 350 HP. McNeil; and one 150 HP. Zell safety. The engines are one 175 HP. high speed for the electric lights, and one Allis-Chalmers-Corliss of 375 HP. with a 125 HP. auxiliary. There is also 100 HP. water power. The plant is well supplied for shipping, being near both the Erie and the D. L. and W. railroads, and receives coal by the D. L. and W. canal, which passes within a few feet of the boiler house.

PRESIDENT E. H. GARCIN.

The rubber machinery consists of 2 washers, 15 mixers, 5 calenders, 18 presses, 3 tubing machines, and 5 vulcanizers, in addition to what has been before mentioned. There are also a fully equipped carpenter and machine shop. The factory is fitted with automatic sprinklers, electric lights, freight elevators, and a Sturtevant heating system.

Edward H. Garcin, the president and general manager, has long been in the rubber business. At the age of 20—he was born in Virginia, in 1864—he became a salesman in the southern field for the old Trenton Rubber Co. After a year, during which his capacity was demonstrated, he left this connection to establish at Richmond the jobbing house of Garcin, Moseley & Bohmer. Again he joined the forces of the Trenton concern, first in charge of their entire southern trade, to which was later added the western field and the Pacific coast. In 1895 he was called to Trenton as vice president and general manager of the company, continuing his connection after the reorganization, two years later, as the Trenton Rubber Manufacturing Co., until his recent retirement to go to Bloomfield.

Mr H. L. Hepburn, the vice president of the new company, a Cornell graduate, has had but a brief business career, having left an important position with the Western Electric Co., to master the rubber business. Mr. W. Clark Symington is secretary and treasurer. These, together with Mr. R. B. Symington, controller, and Mr. J. W. Clark, treasurer, of The Spool Cotton Co., are the directors and sole stockholders.

As will be seen from the above partial catalogue this is no small factory, and the constitution of the company is understood to involve ample capital for the carrying out of its plans for the manufacture of mechanical rubber goods. It is fair to state that the location of the various buildings is most unsatisfactory for the purposes of photography, and that no single picture could give an adequate view of it.

OFFICIAL STATISTICS OF INDIA-RUBBER AND GUTTA-PERCHA.

For the United States Fiscal Year Ended June 30, 1904.

INDIA-RUBBER.

I.—Imports of Crude India-Rubber, by Countries.

FROM—	Pounds.	Value.
Europe:		
Belgium	6,397,282	$5,241,580
France	958,575	681,828
Germany	2,458,668	1,486,803
Italy	8,917	5,684
Netherlands	311,062	261,539
Portugal	3,527,797	2,442,845
Turkey in Europe	2,631	1,406
United Kingdom	7,711,910	5,705,685
Total	21,376,742	$15,897,370
North America:		
British Honduras	22,299	$ 14,184
Quebec, Ontario, Manitoba	2,292	1,810
Costa Rica	116,434	62,188
Guatemala	106,421	39,652
Honduras	87,532	43,031
Nicaragua	747,088	445,930
Panama	138,737	77,674
Salvador	47,609	15,207
Mexico	356,104	148,921
West Indies—British	17,459	7,151
Cuba	451	106
Total	1,650,516	$853,854
South America:		
Brazil	33,109,112	$22,442,252
Colombia	555,663	278,759
Ecuador	1,031,035	545,556
Guiana—British	9,061	3,666
Peru	103,907	72,076
Venezuela	94,826	44,767
Total	34,903,604	$23,390,076
Asia:		
East Indies—British India	91,558	$ 62,556
Sts. Settlem'ts	978,230	319,545
Other British	704	509
Dutch	11,197	8,320
Total	1,084,689	$390,930
GRAND TOTAL	59,015,551	$40,444,250
Total, 1902-03	55,010,571	30,436,710
Total, 1901-02	50,413,481	24,899,230
Total, 1900-01	55,275,529	28,455,383
Total, 1899-00	49,377,138	31,376,867
Total, 1898-99	51,063,066	31,707,620
Total, 1897-98	46,055,497	25,386 010
Total, 1896-97	35,574,449	17,457,976
Total, 1895-96	36,774,460	16,603,020
Total, 1894-95	39,741,607	18,353,121
Total, 1893-94	33,357,783	15,077,933
Total, 1892-93	41,547,680	17,809,239

II.—Imports of Crude India-Rubber, by Customs Districts.

AT—	Pounds.	Value.
Boston	1,547,438	$ 1,027,076
New York	56,841,201	39,066,399
New Orleans	592,458	307,463
Mobile	8,045	4,000
Paso del Norte, Texas	6,460	669
San Francisco	77,517	31,175
Champlain, N. Y.	29,210	5,298
Niagara, N. Y.	2,292	1,810
Other ports	930	360
Total	59,015,551	$40,444,250

III.—Imports of Manufactures of India-Rubber, by Customs Districts.

AT—	Value.
Baltimore	$ 8,942
Boston and Charlestown	64,721
New York	675,758
Philadelphia	13 220
Other Atlantic ports	8,610
New Orleans	2,304
Other Gulf ports	1,061
San Francisco	$ 051
Other Pacific ports	1,577
Chicago	30,169
Other northern border ports	2,284
St. Louis	1,563
Other interior ports	3,304
Total	$821,562
Total, 1902-03	$665.972
Total, 1901-02	449,756
Total, 1900-01	478,663
Total, 1899-00	564,083
Total, 1898-99	379,309
Total, 1897-98	309,247
Total, 1896-97	297,953
Total, 1895-96	294,228
Total, 1894-95	315,902
Total, 1893-94	309,308
Total, 1892-93	338,435

IV.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

FROM—	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber
Baltimore	$ 54	$	$ 987
Bangor, Me.	1,765	452	2,075
Boston	10 891	452,116	256,013
New York	589.132	513,883	1,407,782
Passamaquoddy, Me.	2,579	4,304	1,741
Philadelphia	9,994	10,201	821
Portland, Me.	.....	43	.....
Other Atlantic ports	....	40	..
Gulf ports	4,845	60	2,006
Arizona	15,315	33	9,421
Brazos de Sant'go, Tex	86	.....	.....
Corpus Christi, Tex.	327	... ..	29,851
Paso del Norte, Tex.	30,367	439	23,744
Saluria, Tex.	10,001	70	15,510
Alaska	9,650	9,144	7,171
Hawaii	.....	.....	163
Puget Sound, Wash.	14,647	88,220	23,584
San Diego, Cal.	761	141	94
San Francisco, Cal.	134,630	33,908	115,899
Buffalo Creek, N. Y.	..	....	111,179
Champlain, N. Y.	8,566	.....	129,532
Cuyahoga, Ohio	.... ..	.....	4,954
Detroit, Mich.	16,237	2,140	27,761
Huron, Mich.	3,019	222	12,461
Memphremagog, Vt.	8,161	1,119	10,013
Minnesota, Minn.	23	.....	2.041
Niagara, N. Y.	.....	2,862	140,638
North and South Dak.	7,956	1,150	7,587
Oswegatchie, N. Y.	6,686	.....	8,017
Superior, Mich.	736	229	.....
Vermont, Vt.	23,280	15,542	115,306
Other border ports	413	30	1.099
Total	$280,010	$1,086,384	$2,469,750

GUTTA-PERCHA.

I.—Imports of Manufactures of Gutta-Percha, by Countries.

FROM—	Value.
Austria-Hungary	$ 678
Belgium	17,399
France	3,713
Germany	108,846
Spain	683
United Kingdom	204,144
Canada	28
Japan	9
Total, 1903-04	$335,480
Total, 1902-03	$225,198
Total, 1901-02	127,780
Total, 1900-01	163,337
Total, 1899-00	254,332
Total, 1898-99	115,582
Total, 1897-98	156.997
Total, 1896-97	97,194

NOTE.—Of the above imports, $200,060 worth was entered at Pacific ports.

GUTTA-PERCHA.

I.—Imports of Crude Gutta-Percha, by Countries.

FROM—	Pounds.	Value.
France	2,818	$ 3,763
Germany	174,505	74,818
Netherlands	413	911
United Kingdom	128,532	56,154
West Indies—British	37,770	12,690
Colombia	265	47
Guiana—British	21,708	7,306
—Dutch	1,961	752
British India	12,932	6,654
Straits Settlements	37,098	8,545
Philippines	6,625	3,313
Total, 1903-04	424,617	$174,953
Total, 1902-03	316,290	$222,460
Total, 1901-02	525.767	252,329
Total, 1900-01	280,560	130,357
GUTTA-JULETONG (PONTIANAK).		
Belgium	81,299	$ 7,298
United Kingdom	20,100	1,244
British India	118,363	3,191
Straits Settlements	14,299,434	408,373
British East Indies	368,220	10,125
Total, 1903-04	14,887,416	$430 231
Total, 1902-03	13,984,817	$345,431
Total, 1901-02	16,850,821	501.418
Total, 1900-01	9,371,087	248,838

RUBBER SCRAP.

Quantity and Value of Imports, by Countries.

FROM—	Pounds.	Value.
Belgium	82,731	$ 4,935
Denmark	19,164	1,119
France	537,626	31,476
Germany	3,126,742	178,110
Netherlands	2,905	156
Roumania	18,899	1,141
Russia—Baltic	8,074,779	493,262
—Black Sea	4,385,408	228,886
Norway	501,510	30,001
Sweden	169,222	10,373
Turkey in Europe	259,501	15.648
United Kingdom	1,224,990	74,787
British North America	1,801,935	91,051
Cuba	57,410	3,182
Mexico	5.225	521
Other North America	2,983	137
Total, 1903-04	20,270,970	$1,164,785
Total, 1902-03	24,659,804	$1,516,137
Total, 1901-02	22,894,900	1,437,960
Total, 1900-01	15,235,236	988,316

RECLAIMED RUBBER.

Exports of Reclaimed Rubber, by Countries, for Four Years.

TO—	Value, 1900-01.	Value, 1901-02.	Value, 1902-03.	Value, 1903-04.
Austria-Hungary	$	$ 70	$ 481	$ ...
Belgium	703	1,250	1,064	1,151
France	13,200	38,310	13,932	26,398
Germany	48,419	20,191	19,426	55,739
Italy	17,604	12.291	11,284	20,225
Netherlands	2,734	6,550	9,049	6,932
Denmark	.....	2,809	... ..	.....
Russia	575	.	418	.....
Spain	.....	5,552	1,774	... ..
Sweden-Norway	10,103	18,318	215,904	8.442
Great Britain	295.409	220,844	129,216	380,208
Canada	200,422	143,276	1,308	212,310
Mexico	1,072	42	.....	.....
Japan	2,830	175	85	1,410
Australia	.....	.....	566	.....
Other lands	442	40	.....	20
Total	$642,093	$569,698	$404,586	$712,835

EXPORTS OF AMERICAN RUBBER GOODS.

FISCAL YEAR ENDED JUNE 30, 1904.

EXPORTED TO—	Belting, Packing, and Hose.	Boots and Shoes. Pairs.	Boots and Shoes. Value.	Other Goods Value.	Total Value.
EUROPE:					
Austria-Hungary	$ 2,750	617	$ 684	$ 7,012	$ 10,446
Azores and Madeira	50	1,040	1,487	83	1,620
Belgium	3,686	97,526	36,735	36,329	76,750
Denmark	3,701	23,450	9,877	10,146	23,724
France	5,314	202,349	70,607	62,145	138,066
Germany	27,171	302,404	133,704	141,767	302,642
Gibraltar	3,440	....	....	138	3,578
Greece	....	600	204	100	304
Italy	967	26,973	12 508	43,145	56,620
Malta, Gozo, etc.	....	....	....	100	100
Netherlands	1,773	5,093	1,596	60 410	63,779
Portugal	....	898	932	46	978
Russia	3,454	4,571	2,508	2,662	8,624
Spain	37	107,794	44 597	8 450	53,084
Sweden and Norway	5,780	75,329	34,544	10,636	50,960
Switzerland	942	6 512	2,566	507	4,015
Turkey in Europe	....	113,622	42,123	403	42,526
United Kingdom	120,983	766,875	356,234	907,475	1,384,692
Total, Europe	$180,048	1,735,563	$750,906	$1,291,554	$2,222,508
NORTH AMERICA:					
Bermuda	$ 1,408	24	$ 12	$ 1,866	$ 3,286
British Honduras	463	....	....	279	742
Nova Scotia, New Bruns.	10,282	27,033	28,557	8,060	46,899
Quebec, Ontario, Manitoba	80,628	44,256	47 721	575,277	703,626
British Columbia	26,465	13.041	22,886	17,994	67.345
Newfoundland, Labrador	6,061	40,364	20,182	2,108	28.341
Costa Rica	3.760	182	97	4,562	8,409
Guatemala	4.155	40	14	1,615	5,784
Honduras	4.876	36	44	837	5,757
Nicaragua	3.812	93	41	1,004	4,857
Panama	2,243	522	270	1,732	4,245
Salvador	4,721	72	27	733	5,481
Mexico	137 608	2,229	1,553	146,712	285 873
Miquelon, Langley	264	1,788	2.037	42	2,343
West Indies—British	4,208	1.279	788	6,048	11,139
Cuba	58,251	2,763	2,980	100,332	161,563
Danish	207	117	115	293	615
Dutch	709	60	27	434	1,170
French	....	....	....	111	111
Haiti	327	456	296	171	794
Santo Domingo	1,802	1 0	37	1,722	3,561
Total, North America	$352,335	134,475	$127,674	$871,932	$1,351,941
SOUTH AMERICA:					
Argentina	$ 9,140	3.250	$ 3,221	$ 10,466	$ 22,827
Bolivia	....	....	....	633	633
Brazil	4,850	3,677	2,282	20,783	27,894
Chile	6,384	198	159	5.255	11,798
Colombia	8,653	1,862	1,089	6,817	16,569
Ecuador	10 915	264	152	1,433	12,500
Guiana—British	447	5,280	2,291	672	3,410
Dutch	81	72	24	157	262
Peru	7,253	720	524	6,347	14.124
Uruguay	677	696	532	1,504	2,713
Venezuela	3,964	187	412	4,631	9,007
Total, South America	$ 52,383	16,206	$ 10,686	$ 59,698	$121,737
ASIA:					
Chinese Empire	$ 7,725	1,417	$ 752	$ 9,532	$ 18,009
China—Russian	395	....	....	2	397
East Indies—British India	5,869	650	523	9,735	16,127
Sts. Settl'mts	645	36	84	465	1,194
Other British	....	....	....	73	73
Dutch	373	....	....	754	1,127
Hong Kong	1,450	106,000	32,625	3,150	37,225
Japan	40,992	43,434	24,159	84,038	149,189
Korea	951	6	4	2,075	3,030
Russia, Asiatic	....	12	12	....	12
Turkey in Asia	....	44.737	16,298	273	16,571
All other Asia	17	....	....	314	331
Total, Asia	$ 58,417	196,292	$ 74,457	$110,411	$243,285
OCEANICA:					
British Australasia	$ 67,841	189 093	$104 626	$ 75,471	$247,939
French Oceanica	4,472	434	365	817	5,654
German Oceanica	57	....	....	178	235
Philippine Islands	32.836	14,132	4,553	36,402	73,790
Total, Oceanica	$105,206	203,659	$109,544	$112,868	$327,618
AFRICA:					
British Africa—West	$ 985	492	$ 491	$ 330	$ 1,805
South	128,444	14 177	8,023	21,192	157,659
Canary Islands	....	....	....	76	76
Liberia	....	....	....	5	5
Portuguese Africa	2,052	20	40	1,789	3,881
Turkey in Africa—Egypt	140	9,924	4,573	895	5,008
Total, Africa	$131,621	24,613	$ 13,127	$ 24,287	$169,035
GRAND TOTAL 1904	$880,010	2,310,808	$1,086,364	$2,469,750	$4,436,124
Grand Total, 1903	819,985	2,307,401	1,056,491	2,299,875	4,176,351
Grand Total, 1902	634,146	2.594,708	1,046.315	1,781,941	3,462,402
Grand Total, 1901	565.726	1,459,100	724,015	1727,527	3,017,268
Grand Total, 1900	541,830	767,104	420,746	1,405,212	2,367,788
Grand Total, 1899	.... (a) ...	496,586	260,886	1,504,499	1,765,385
Grand Total, 1898	.... (a) ...	391,832	224,705	1,499,157	1,723,862
Grand Total, 1897	... (a)	306.026	195,499	1,611,646	1,807,145
Grand Total, 1896	... (a)	350,713	216,657	1,642,499	1 859,156

a—Included in "Other Goods" prior to July 1, 1899.

GENTSCH'S ARTIFICIAL GUTTA-PERCHA.

THE insulating material known as "New Gutta-percha," or "Gutta-Gentsch," has had its first practical application in the United States in consequence of its having received the favorable consideration of the United States army signal service. A cable insulated with "Gutta-Gentsch," ordered by General A. W. Greely, chief of the signal service, and constructed by the Bishop Gutta Percha Co. (New York), has been under test for about four months, between fortifications on Long Island sound. The cable is one mile in length—single conductor, composed of seven No. 24 B. & S. copper wires, stranded and covered with a seamless layer of Gutta-Gentsch to a diameter of $\frac{7}{32}$ inch, and served and armored according to general practice. The electrical engineer of the signal corps, in a letter to the patentee, wrote of Gutta-Gentsch: "If the material proves to be as good as all published reports indicate, I have no doubt that the signal service will use a good deal of it in future."

Gutta-Gentsch, the invention of Adolf Gentsch, of Vienna, first came into notice as the result of exhaustive experimenting by the German telegraph department, which led to the acquiring of the German patents, in March, 1901, by the Felten & Guilleaume Carlswerk Actiengesellschaft (Mülheim). The government first ordered a four-conductor cable nearly 6 miles in length, to connect the island of Föhr with Schleswig, with such results that further orders were placed with the Mülheim firm. There are now in use by the German telegraph department, 15 miles of cables insulated with Mr. Gentsch's material. The Danish government has recently placed with the Mülheim works an order for about 25 miles of submarine cable insulated with the Gentsch material. Messrs. Felten & Guilleaume have since acquired the Gentsch patents for Austria-Hungary, erecting a special factory for supplying the material in that country, and, still later, the patents for Russia, where also a small plant has been erected for manufacturing. The use of the new material, however, has been by no means confined to submarine cable work; it has been used for insulation purposes generally by the company referred to.

The patents for Great Britain and the British possessions have been acquired by the New Gutta Percha Co., Limited (London), which had a paid up capital one year ago of £112,500, and at the second annual meeting of which favorable reports were made. The object of the British company, at first, was the production of the new material for the trade, but they are now laying down plant at Greenwich for the manufacture of insulated wires and cables. There is now being formed a company subsidiary to the English corporation, to control the Gentsch patents for southern Europe. The American patents have not yet been exploited.

The new material was described at some length in THE INDIA RUBBER WORLD of September 1, 1902 (page 385), and October 1, 1902 (page 9). Briefly stated, it is a mixture, with India-rubber, of vegetable waxes specially treated to raise their melting point to that of rubber. Tests that have been made indicate that the product is equal to natural Gutta-percha for electrical uses, while the cost is claimed to be much less. The United States patents granted to Mr. Gentsch are: No. 657,696 (September 11, 1900), "Process of raising the melting point of resins, waxes, and similar bodies"; No. 699,383 (May 6, 1902), "Insulating composition and method of producing same."

While reference is made above only to insulation work as affording a field for the use of Gentsch's compound, experiments have been made which, it is asserted, indicate its value in other work, as a substitute for India-rubber or Gutta percha. It has been tried also in compounds for uses in place of hard rubber.

NEWS OF THE AMERICAN RUBBER TRADE.

BOSTON BELTING CO.

AT the annual meeting, on November 29, Edwin A. Hildreth and Francis H. Stevens were elected directors, to succeed James Pearce, deceased, and George A. Miner, resigned. The directors have declared the regular quarterly dividend of 2 per cent., payable January 2, to shareholders of record December 15.

THE FISK RUBBER CO.

THE Eastern selling office of this company has been removed from Chicopee Falls, Massachusetts—where the factory is located—to New York city. The location is Nos. 754-756 Seventh avenue, where premises have been rented, 30 × 75 feet, and attractive offices furnished for the Eastern department, together with the New York local branch. Mr. J. W. Bowman, the company's manager of sales, took charge of the new offices about the middle of December. The manager of the New York local branch is Mr. E. A. Hoffman.

A HARTFORD BRANCH AT LOS ANGELES.

THE business conducted hitherto as the Harrison-Williams Rubber Co. (Los Angeles, California), dealers in rubber tires, with an extensive repair shop, has been purchased by The Hartford Rubber Works Co., who will continue it as their Los Angeles branch. It is understood that H. O. Harrison, president of the corporation as formerly constituted, will remain in charge.

THE SWEET TIRE AND RUBBER CO. (BATAVIA, N. Y.)

THIS company was referred to lately as having about 60 men on its pay roll, and running the factory 15 hours per day. There were orders in hand for six months' work, and if the business continued to increase, additional plant would be needed. The company had installed machinery for making vehicle tires in lengths of 500 feet, and were manufacturing pump valves to order. The output of the factory during November, 1904, is reported to have been seven times larger than for the same month one year ago. Shipment was made during the first week in December of a carload of tires to the Pontiac Spring and Wagon Works (Pontiac, Michigan), the same being sufficient for equipping 1500 carriages.

WEST COAST RUBBER CO. IN BANKRUPTCY.

A PETITION in voluntary bankruptcy of the West Coast Rubber Co. (San Francisco) was filed in the California superior court on November 22. The petition was signed by J. H. Bennett, president, and H. W. Goodall and Edwin T. Cooper, directors. It recited that the company's insolvency was due to the manner in which its business had been conducted by George Fredericks, who was president of the company for two years, up to October 15 last. The assets are said to be $50,150.73 and the liabilities $72,184.81. The court granted the petition and named December 1 as the date for creditors to prove their claims and choose an assignee. At this meeting Don A. Sutherland was agreed upon, after which he was appointed assignee by the court, under bonds of $100,000.——On October 11 George Fredericks, as president of the West Coast Rubber Co., filed a suit in the superior court at San Francisco to enjoin the other directors—named above—from deposing him from his office; also, to have his rights defined as to certain shares of the company's capital, held by him in conjunction with H. W. Goodell. This did not prevent Fredericks from being deposed as president, however, and on November 14 he sued the company for more than $23,000 money advanced, and for services rendered, and had a writ of attachment issued for all its property.——The company had a small factory in San Francisco, for molded rubber work, besides selling a general line of rubber goods.

THE GUTTA PERCHA COMPANY IN VANCOUVER.

THE Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, have taken warehouse premises at No. 160 Hastings street, Vancouver, British Columbia, and will carry there a large and complete stock of their manufactures, including rubber boots and shoes and mechanical goods. The establishment will be run as a branch of the company, and will be under the management of Mr. A. G. McKenney, who has been in the employ of the company for twelve or fifteen years, and who for the past five or six years has spent most of his time in British Columbia looking after the interests of the company in that territory. Mr. McKenney is therefore well known to the rubber purchasing trade in British Columbia, and well posted in its requirements. The stock for the Vancouver branch was shipped forward with a view to the premises being open for business on or about January 1.

MERCHANTS' RUBBER CO., LIMITED (BERLIN, ONT.)

IN response to an announcement in the Berlin newspapers that the factory of this company would be open to the public on November 10, more than 1100 persons witnessed on that day the processes of converting crude rubber into rubber boots and shoes. During the day the entire factory was running as usual, in all departments, and all employés were required to turn out the customary amount of work. They all cheerfully assisted in making the day a great success. The company was organized as late as June, 1903, and, at the date above mentioned, the factory had been in operation only about eight months. The total number of employés was then 140, and the daily production 1500 pairs. Each visitor received a souvenir in the shape of a badge, to which was attached a miniature rubber boot.

OIL-PROOF MECHANICAL RUBBER GOODS.

THE United States Chemical Rubber Co., a newly incorporated Chicago concern, advise THE INDIA RUBBER WORLD that they will place upon the market an oil-proof line of mechanical rubber goods, for use in situations where the rubber is likely to be exposed to oil and grease. They say: "Our main lines will be packing and belting, and from present indications we will have a larger demand from oil companies alone than we can fill for some time to come." Articles of incorporation of the above company were filed with the recorder of deeds at Washington, D. C., August 15, 1904, the capital stock being stated at $200,000. Officers: D. Nettenstrom, president; H. L. Walker, vice-president; John R. Nettenstrom, secretary and treasurer. Address: No. 109 South Jefferson street, Chicago.

EUREKA FIRE HOSE CO.'S EMPLOYES.

THE annual ball and reception of the factory employés of the Eureka Fire Hose Co. (New York) was held on the evening of December 2 at Greenville, New Jersey, in Columbia Hall, which had been tastefully decorated for the occasion, and was attended by about 1200 persons, including employés and their guests. Among the guests were the Hon. Mark M. Fagan, mayor of Jersey City; the Hon. John Brennan; Fire Commissioners Joseph Zumbusch, Richard F. Connely, and Henry Z. Niblett, and C. J. Esterbrook, clerk of the board of fire commis-

sioners of Jersey City. The Eureka company was represented by Vice President Benjamin L. Stowe, Treasurer George A. Wies, Secretary Isaac B. Markey, and W. H. Payne, the company's representative at Atlanta, Georgia. A fine collation was served and the entertainment was in every way successful.

MADISON SQUARE AUTOMOBILE SHOW.

THE fifth annual automobile show, under the auspices of The Automobile Club of America and the National Association of Automobile Manufacturers, at Madison Square Garden, New York, will open on Saturday night, January 14, and continue for one week. On December 17, James C. Young, manager of the Garden, reported that "every available inch of space" had already been taken. Enough applications had been received, he said, to occupy a building three times the size, but manufacturers had to be content with the allotment made by the committee of arrangements. About 250 concerns will exhibit automobiles or accessories, including, as usual, the leading manufacturers of rubber tires. A number of foreign cars will be exhibited in the Garden, notwithstanding the special exhibit to be made at the same time, at Herald Square, by the importers of foreign vehicles.

THOMAS TAYLOR & SONS (HUDSON, MASS.)

THOMAS TAYLOR, JR., died at his home in Hudson, Massachusetts, on December 13, aged 28 years. He was associated with his father, Thomas Taylor, and his brother, Frank Taylor, in the firm Thomas Taylor & Sons, manufacturers of elastic shoe goring and elastic webbing. On account of the death of Mr. Taylor the firm name may be changed, though this question has not been decided. The business has been located in Hudson since 1889, after having been conducted at Easthampton, Mass. The senior member of the firm formerly owned and operated the Vale Mills, Derby, England, in the same business, in which he has over 40 years' experience.

SQUIRES'S DENTAL RUBBER.

ARTHUR C. SQUIRES (Akron, Ohio) has entered into a contract with The B. F. Goodrich Co. for the manufacture of his "Quick Curing" dental rubbers, during the tenure of the patent on the same. He has also made a contract with Lee S. Smith & Son (Pittsburgh, Pennsylvania), who become sole agents for these goods, for the same length of time. The parties who projected the Akron Dental Rubber Manufacturing Co., for the purpose of manufacturing Mr. Squires's compound, have abandoned the same, not having been able to secure the capital which they expected.

GOOD WEATHER FOR THE TRADE IN RUBBERS.

TWO weeks ago it was stated that "two-thirds of the average winter snowfall in New York we have already had since the present winter began." The record for the remainder of the snow belt of the United States also shows more than the usual precipitation to date, which is a most favorable indication for the rubber footwear trade. The assertion often has been heard in former years, that a given depth of snowfall before January 1 was worth as much to the rubber shoe industry as twice the amount later in the winter. It would seem that no occasion exists for complaint on this score this season, besides which, apparently a greater proportion of New Yorkers are wearing rubbers this year than at any time formerly. Evidently the various substitutes for rubber footwear—such as "waterproof" leather shoes—have not justified the promises made for them.

A DEMAND FOR CLEANER CHICLE.

JOHN COLGAN, president of the Colgan Gum Co. (Louisville, Kentucky), has made a complaint to the customs authorities in that city that the gum Chicle on which he pays an import duty of 10 cents a pound includes a large percentage of bark, stones, and other entirely worthless material, and requested that the matter be referred to the secretary of the treasury in Washington, in order that some provision may be made for cleaning the Chicle before the duty is levied. Another chewing gum factory in Louisville is owned by the American Chicle Co., which has also a factory in Canada, and a local newspaper mentions that much of the Chicle bought by the American Chicle Co. is first received in Canada and cleaned before it arrives in the United States. At present there is no provision in the United States customs regulations for making allowance for the adulteration of Chicle before levying duties.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Nov. 26	12,050	34⅛	32⅛	8,105	91¾	88
Week ending Dec. 3	5,100	34⅜	33	8,040	93	91
Week ending Dec. 10	14,550	33¾	27⅞	4,400	93½	89
Week ending Dec. 17	5,050	32⅛	29⅞	4,600	93⅛	90¼
Week ending Dec. 23	1,300	32¾	32¼	3,500	94½	93

PREFERRED STOCK, $23,525,500.
Last Dividend, December 15, 1904—1⅛%.

	1900.	1901.	1902.	1903.	1904.
Highest price	104¾	85	64	58	94½
Lowest price	77¾	47	49⅛	30¼	41⅛

COMMON STOCK, $23,666,000.
Last Dividend, April 30, 1900—1%.

	1900.	1901.	1902	1903.	1904.
Highest price	44	34	19⅜	19⅛	34⅜
Lowest price	21	12½	14	7	10½

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High	Low.
Week ending Nov. 26	3,900	24½	23⅛	750	87¾	87
Week ending Dec. 3	25,850	28¼	24	3,498	98	88
Week ending Dec. 10	35,919	29⅞	24¼	2,231	97½	90
Week ending Dec. 17	10,100	28	25½	650	95	92
Week ending Dec. 23	2,350	27	26	500	94	93½

PREFERRED STOCK, $8,051,400.
Last Dividend, December 15, 1904—1¾%.

	1901.	1902.	1903.	1904.
Highest price	90	74	64½	98
Lowest price	65	63	60	72⅞

COMMON STOCK, $16,941,700.
Last Dividend, July 15, 1901—1%.

	1901.	1902	1903.	1904.
Highest price	38¼	25⅜	30	29⅞
Lowest price	18	17¼	12	14½

SKIRM V. EMPIRE RUBBER MANUFACTURING CO.

THE jury in *re* William H. Skirm, Jr., *v.* Empire Rubber Manufacturing Co., in the United States court at Trenton, New Jersey, on December 14, returned a verdict in favor of the plaintiff for $419.14, the amount of salary claimed to be due and unpaid, but denied the claim of Skirm for something like $10,000, in respect of certain stock in the company and the dividends accruing thereon. The claim for salary due was not contested by the company. Further details regarding the suit appeared in THE INDIA RUBBER WORLD, August 1, 1904—page 394. At the trial, counsel for the Empire company argued that when the present owners of the company came into control, not knowing of a certain contract which existed with Edward F. O'Brien, the plaintiff, who had been an officer of the corporation, admitted fault in making the contract, and agreed

to surrender his shares in the company as his share in closing said contract.

THE CRUDE RUBBER SUPPLY IN COLORADO.

THE latest news from Colorado is that the work of setting up a rubber extraction plant in the town of Salida was begun on the morning of December 15, by the Salida Crude Rubber Co. The machinery arrived the night before, and the new mill was to be in operation within 15 days. This announcement differs from those coming from Colorado hitherto, since they promised that mills would be in operation within 60 days. It is to be presumed that announcements will next be in order of mills to be in operation the day before.

DEATH OF THOMAS J. SHEEHAN (MALDEN, MASS.)

THOMAS J. SHEEHAN died at his home in Malden, Massachusetts, on December 23, of pneumonia, in his forty-ninth year. He was born in Malden, and after leaving school was employed as a cutter in the local rubber shoe factory, after which he became successively foreman for a rubber company in Long Island (New York), and superintendent of the Niagara Rubber Co., of Niagara Falls. When the Concord Rubber Co. began operations at Concord Junction, Massachusetts, he assumed control of the company, being also one of the largest shareholders in the corporation.

TRADE NEWS NOTES.

VOORHEES Rubber Manufacturing Co. (Jersey City, New Jersey,) announce that they were awarded a gold medal for their mechanical rubber goods, at the St. Louis World's Fair, and the highest award for rubber belting. A view of their exhibit was given in THE INDIA RUBBER WORLD, October 1, 1904 (page 27.)

=The regular semi annual dividend of 3 per cent. on the preferred shares of the Boston Woven Hose and Rubber Co. was payable on December 15.

=The Hood Rubber Co. (Boston) have declared a regular quarterly divided of 2 per cent., payable December 15.

=Notices were posted at the factories of the Boston Rubber Shoe Co., at the beginning of December, announcing a nine hour day, instead of ten hours.

=Mr. D. Lorne McGibbon, general manager of The Canadian Rubber Co. of Montreal, last month made his annual visit to the branches and agencies of this company. These extend from Halifax, on the Atlantic seaboard, to Vancouver, on the Pacific, and necessitate several thousand miles of varied travel. During his western trip Mr. McGibbon opened an extensive sales branch at Calgary, in the North West territories.

=Anything seems possible, to some people, in connection with automobile tires. The Middletown (Connecticut) *Press* says: "The Hartford Rubber Works Co. is to present each of its 1000 employés with a turkey. No distinction is to be made between married or single employés, male or female. All are to receive a bird, and it is going to cost the company $3000; but then that amount is small when you take into consideration that the concern is making automobile tires."

=The Bridgeport (Connecticut) Elastic Fabric Co. are roofing in the brick addition which has been constructed at the rear of their plant on Center street.

=A contract is reported for a building to be constructed by the G. & W. A. Elliott (Minneapolis, Minnesota), on Sixth street, near Second avenue, south, in that city, to cost $5000 and to be occupied by the Hartford Rubber Works Co.

=Mr. Charles P. Kelly, for many years manager of molded goods and kindred lines with Morgan & Wright (Chicago), has now taken up a similar position with The Canadian Rubber Co. of Montreal.

=The Republic Rubber Tire and Shoe Co. (New York), incorporated under the laws of New York state something over a year ago, have built up a large business in repairing pneumatic automobile tires of leading makes. They have acquired United States patent No. 717,263, granted to H. R. Palmer, for flexible protectors (of leather or rubber) for rubber tires, and it is understood have issued a notice cautioning other parties against infringing said patent. The manager of the business is Frederick E. McEwen, who has been connected with the vehicle tire trade for a number of years.

=Harry Wagner has been appointed an assistant superintendent of the Woonsocket Rubber Co., to have charge of their factory at Millville, Massachusetts, dating from January 1. For five years Mr. Wagner has been in the employ of the Apsley Rubber Co. (Hudson, Mass.) and prior to that time was with the National India Rubber Co. (Bristol, R. I.).

=Hirsch & Kaiser, Inc. (New York), advise THE INDIA RUBBER WORLD that they have opened a store at Nos. 230-232 Purchase street, Boston, where they will carry a line of foreign and domestic skins, pelts, and wool. They will also handle Mangabeira and Maniçoba rubber, and sundry other South American products.

=The Canadian Rubber Co. of Montreal are publishing a new Mat and Matting catalogue. All the cuts will be in halftone, and the catalogue will be gotten out in a very handsome manner. A Tiling catalogue and several other attractive rubber booklets are also in course of preparation by this progressive Canadian company.

=Coupons due January 1 on the 6 per cent. first mortgage gold bonds of the Mechanical Rubber Co. are payable on presentation at the office of the Knickerbocker Trust Co., No. 66 Broadway, New York. Coupons due on the same date on the 6 per cent. mortgage debenture bonds of the New York Belting and Packing Co., Limited, are payable at the same place.

=The employés of the Apsley Rubber Co. (Hudson, Massachusetts), on the evening of December 3, presented President L. D. Apsley with a beautiful silk banner, lettered with gold, on which was expressed their appreciation of his Thanksgiving Day remembrance of the whole factory force.

=Mr. W. H. Adams, formerly Boston agent of the Eureka Fire Hose Co., and recently with the Standard Brazing Co. (Boston), has accepted a position with The Canadian Rubber Co. of Montreal, as manager of the company's extensive fire hose and fire department supply business.

=The new factory building of the Hope Webbing Co. (Pawtucket, Rhode Island) presents an interesting application of the fan system of heating and ventilation. In connection with an old building, and contemplated additions, the contents amount to about 875,000 cubic feet. In this installation, made by the B. F. Sturtevant Co. (Hyde Park, Massachusetts), the distributing ducts occupy no valuable space, since the heated air is forced through an underground system into vertical flues, which are built into the brick walls. From these flues the air is admitted in the usual manner. By this arrangement all the heating surface is concentrated in a single fireproof casing in connection with the fan, and there is eliminated from the building all extended systems of steam piping.

=The Pope Bicycle Daily Memorandum Calendar for 1905 contains a memorandum leaf for every day in the year, and 365 original sayings in favor of good roads, good health, outdoor exercise, and that great vehicle of health-giving, the modern bicycle, by our most eminent living men of marked accomplishment. The calendar may be obtained by sending 10 cents in postage to the Pope Manufacturing Co. (Hartford, Connecticut), or free at any of the company's stores.

=The employés of the shipping room of the Boston Rubber Shoe Co. (Malden, Massachusetts), on the evening of December 2, enjoyed a concert and dance organized by a committee of their department, which was attended by about 125 couples.

=Mr. Harrison C. Frost, formerly of the Revere Rubber Co., and one of the best known rubber men in the United States, is now with The Canadian Rubber Co. of Montreal, as manager of the extensive mechanical goods department of this company.

=The business of Thomas E. Greacen, wholesale boots, shoes, and rubbers, No. 144 Duane street, New York, has been merged into that of Morse & Rogers, No. 134 Duane street. Mr. Greacen, who entered the wholesale trade in 1871, will be a shareholder in the corporation of Morse & Rogers, but will have no active part in the management.

=Progress is reported in the organization of the company mentioned in the last INDIA RUBBER WORLD as being formed at Lawrence, Massachusetts, for the manufacture of rubber footwear. The parties interested are not yet in a position to make any public announcement, but it is understood that machinery is being installed in the premises in Lawrence sometime occupied by the American Woolen Co.

=Mr. F. X. Pund has retired as vice president and withdrawn from The Queen City Supply Co. (Puchta, Pund & Co.), of Cincinnati, Ohio, disposing of his interest to Mr. George Puchta, under whose management as president the business will be continued as heretofore.

=Mr. E. H. Paine, manager of sales of the United States Rubber Co., gave a dinner to the selling agents of the company on the evening of December 21, at the Hotel Astor, New York. It was a delightful dinner, handsomely served, and thoroughly enjoyed. The president of the company, Colonel Samuel P. Colt, was the guest of honor, and in an after-dinner talk gave the guests an encouraging statement of the condition of the company's affairs.

=Up to the time of going to press with this issue no news has been received at New York of the arrival at Pará of Commodore E. C. Benedict and party, whose sailing from New York on the steam yacht *Virginia* was reported in the last INDIA RUBBER WORLD.

THE MUNFORD RUBBER TIRE CO. GOES TO LAW.

TWO suits were filed in the United States circuit court at Cincinnati, Ohio, on December 24, by The Munford Rubber Tire Co., of Atlanta, Georgia, in which the defendants named are rubber tire manufacturers. The Munford Rubber Tire Co., by the way, succeeded at one time to the interests of The Finley Rubber Tire Co., of Atlanta, selling agents originally of the Rubber Tire Wheel Co., who were then owners of the Grant patent for solid rubber tires. The result of some former litigation in which The Munford Rubber Tire Co. was involved was reported in THE INDIA RUBBER WORLD July 1, 1902 (page 320), a decision having been rendered in the United States circuit court at Atlanta sustaining—in that jurisdiction—the Grant patent. The first of the two new suits alleges a violation of the Sherman anti-trust act, which was recently construed in a decision of the United States supreme court in the celebrated Northern Securities case. There are named as defendants the Rubber Tire Wheel Co. and ten manufacturing companies engaged in the production of rubber tires, it being alleged that they formed a combination illegal under the Sherman act by controlling the supply and raising the prices of rubber tires in restraint of trade among the several states. The combination referred to evidently is that made under the license agreement of September 1, 1903, which came to an end within one year from that date. The second of the suits by the Munford company is directed against the Rubber Tire Wheel Co., an Ohio corporation, and the Consolidated Rubber Tire Co., a New Jersey corporation, doing business in Ohio, and claims damages in the sum of $72,000 for alleged breach of contract. It is claimed that the defendant companies made large sales of their tires in the district which was reserved to the Munford company as their selling agents.

THE NEW RUBBER SHOE PRICES.

THE United States Rubber Co. have issued their lists for the season of 1905, to take effect from January 2. This is the usual season for the issue of these lists, though last year they were delayed until February 1, on account of the uncertainty at the beginning of the year in the crude rubber market. It cannot be said that the crude rubber market is now devoid of uncertainty, but it is to be presumed that the new policy of the company in relation to covering their requirements in rubber well in advance has rendered them more independent than formerly of fluctuations in prices. Without going into detail, it may be stated that the new lists are practically without change from last year, except that in a few items of men's boots, perfections lumbermen's goods, and some other heavy goods, a reduction has been made—generally about 20 cents per pair. The printed discount sheet repeats the figures which have been in effect since June 1, 1904, these being the figures intended to serve for the whole year. Contracts with jobbers, however, allow an extra 5 per cent. discount for early orders, in keeping with the policy of the company for several years past. The discounts to retailers are as follows:

First quality (except Woonsocket and Meyer)	25 @ 3%
Woonsocket and Meyer brands	25 @ 5 @ 3%
Second quality (except Rhode Island)	25 @ 10 @ 3%
Rhode Island brand	25 @ 10 @ 5 @ 3%
Colonial brand	Net prices.

Catalogues and price lists have been received for the following constituent companies of the United States Rubber Co.:

American Rubber Co.	Cambridgeport, Mass.
Boston Rubber Shoe Co	Boston, Mass.
L. Candee & Co.	New Haven, Conn.
Goodyear's India-Rubber Glove Manufacturing Co.	New York.
Jersey Rubber Co.	New Brunswick, N. J.
Meyer Rubber Co.	New Brunswick, N. J.
Wales-Goodyear Shoe Co.	Naugatuck, Conn.
Woonsocket Rubber Co	Woonsocket, R. I.

Separate lists have been received of the "Connecticut" and "Rhode Island" brands and also the "Unlisted List," covering a number of specialties marketed by the United States Rubber Co.

MECHANICAL RUBBER GOODS PRICES.

ALTHOUGH the question of making an advance on mechanical rubber goods has been discussed to a considerable extent of late, it does not appear that any concert of action has been agreed upon by the manufacturers in this field. Some of the manufacturers during the month have withdrawn all former quotations, as preliminary to making an advance to be determined by the necessities of the situation, but no special rate of advance seems to have been made even by these firms. Certain other firms report that, in view of advances made some months ago, they do not feel any necessity at present for making another advance.

PERSONAL MENTION.

DR. ALBERTO PIRELLI of Milan, Italy, whose visit to the United States was reported recently in these columns, writes to THE INDIA RUBBER WORLD from Manáos, Brazil, near which place he has been observing the processes of producing crude rubber. He expected to return to Italy in December.

=Mr. Rudolph Zeitz, after spending the past two years in New York, returned recently to Pará, where he was engaged in business for many years, and where it is understood that he will again become connected with the rubber trade.

=The London *Standard* of December 5 published a despatch from St. Petersburg with reference to the presence in Moscow, during the preceding week, of Mr. Charles Ranlett, who was supposed to be Charles Ranlett Flint, of New York, visiting Russia in connection with the sale to the government of certain Argentine and Chilean warships. On leaving Moscow he started for Constantinople, via Warsaw and Odessa. Later (December 8) Mr. Flint was reported to be in Constantinople negotiating the sale of pneumatic guns to Turkey, and a St. Petersburg despatch stated that Russia had bought no South American warships.

=Mr. James N. Babcock, of the freight department of the Boston Rubber Shoe Co., is receiving congratulations on the announcement of his engagement to Miss Clara N. Frost, of Malden, Massachusetts.

AMERICAN RUBBER SHOES ABROAD.

EXPORTS of rubber footwear from the United States during the first eleven months of six years past have been officially stated as follows:

	Pairs.	Value.
1899	542,042	$ 256,713
1900	1,133,473	593,664
1901	2 094,501	840,971
1902	2,138,221	958,085
1903	1,942,845	890,835
1904	2,120,527	1,089,215

RUBBER REGULATIONS ON THE CONGO.

[FROM "LA CHRONIQUE COLONIALE," BRUSSELS.]

THE Congo Free State has just extended the decrees of October 30, 1892; January 5, 1899; and June 7, 1902, as well as the resolutions adopted March 22, 1899, and June 18, 1902, thereby applying them to the entire territory of the domain. These are the legislative measures taken for the purpose of preventing the decrease in the supply of rubber from the forests.

A new decree, issued on September 22, 1904, has gone into effect, whereby whosoever gathers rubber in the forests or from grounds belonging to the domain, either for his own account or for the account of others, shall be compelled to annually plant in such forests or on such grounds a number of rubber trees or *lianes* (creepers) not less than 50 for rubber gathered from trees or *lianes*, and not less than 15 for rubber called *des herbes*,* for each 100 kilograms or fraction of 100 kilograms of fresh rubber gathered therefrom within the same period.

Those who are not natives are responsible for the carrying out of the above mentioned obligations by the natives who furnish them the rubber, in whatever capacity they may be considered.

The government agents in such parts of the domain in which the state has not given up the exploitation of the rubber, as well as the private parties or holders of concessions and their agents, in such parts of the domain in which the state has ended the exploitation, are obliged to do the amount of planting as stated above, and to care for the plants, and they must act in accordance with the conditions and terms which are specified in the executive clauses of the decree, the principal stipulations of which we recapitulate below.

The rubber from trees or *lianes* must be gathered only by tapping (incisions.)

The cutting down of rubber trees or *lianes*, to remove the bark, and the extraction of rubber from trees or *lianes* by means of beating or crushing, or by any means other than that prescribed in the first paragraph of this section, is prohibited.

Infractions of this decree, or of the resolutions adopted for its execution are punishable by a fine varying from 100 to 5000 francs, and by hard labor for 10 days to six months, or by either one of these penalties.

The masters or employers, or, where firms or corporations are concerned, their representatives in the Congo, as well as the agents of the government, shall, under the conditions of the executive resolutions, be punishable to the amount of the above mentioned fines, if they do not take due care to see to the strict carrying out by their officials or by their subordinates of the legal requirements in regard to the planting of rubber trees and *lianes*, and to their maintenance, or of the prohibitive clauses contained in the decree.

* "Root rubber." See THE INDIA RUBBER WORLD, May 1, 1903 (page 261).

AMAZON STEAM NAVIGATION CO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The directors of the Amazon Steam Navigation Co., Limited, at their meeting to-day, declared a half yearly dividend on account of the current year of 2 per cent., or 5 shillings per share free of income tax, payable on and after January 10, 1905. Also that the transfer books of this company will be closed from December 21, 1904, to January 6, 1905, both days inclusive.

G. STREET & CO., LIMITED.

London, December 14, 1904.

REVIEW OF THE CRUDE RUBBER MARKET.

THE highest value for rubber in the history of the New York market was reached on November 26, when the cost of import of Manáos fine was $1.32 per pound, net. Speedily following this date a decline in values was cabled from Amazon ports. An important decline was established during the week ending December 10, when purchases were made at Manáos which would give a cost of $1.16¼ net, landed New York, for Upriver fine, and other grades in proportion. By December 15 an advance had been made for rubber of the same grade to $1.22, and during the week ending December 24 there were large transactions on the basis of $1.26, net, New York. The highest sales made during December of Upriver fine spot were at $1.30 and the lowest at $1.20. For future delivery, January to March, sales were made of Upriver fine at $1.50, net, for quantity, without brokerage. At the close of the month a lower market was reported at both Pará and Manáos. The demand for the close of December is very moderate, as this is the period for stocktaking in many factories, besides which the principal consumers appear to be supplied with Pará rubber for immediate use, and are now only interested in future delivery values.

The weather conditions have been favorable for the demand for rubber footwear to an extent almost unprecedented, pointing perhaps to the largest consumption of rubber in this branch ever known—a condition which, in connection with slighter receipts of rubber thus far for the season, does not encourage any hope of substantially lower prices soon for crude rubber.

Rubber imports into the United States for the first eleven

months of three years past have been as follows, officially stated:

	1902.	1903.	1904.
Pounds	46,007,428	50,868,845	55,560,506
Value	$22,568,786	$31,960,432	$38,506,882

Arrivals at Pará (including Caucho), at last advices, compare with the same months of previous years as follows:

	1901.	1902.	1903.	1904.
July ..... *tons*	1260	1290	1280	1240
August	1290	1370	1230	1250
September	1940	1670	2010	1810
October	2640	2280	2440	2460
November	2970	2650	2980	2800
December	3530	2990	3530	*a* 2910
Total, six months	13,630	12,250	13,470	12,470

[*a* To December 28, 1904.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on December 30—the current date.

PARA.	Jan. 1, '04.	Dec. 1, '04.	Dec. 31.
Islands, fine, new	90@ 91	125@126	114@115
Islands, fine, old	@	none here	none here
Upriver, fine, new	93@ 94	129@130	119@120
Upriver, fine, old	96@ 97	none here	none here
Islands, coarse, new	55@ 56	72@ 73	65@ 66
Islands, coarse, old	@	none here	none here
Upriver, coarse, new	76@ 77	96@ 97	93@ 94
Upriver, coarse, old	@	none here	none here
Caucho (Peruvian) sheet	61@ 62	71@ 72	69@ 70
Caucho (Peruvian) ball	72@ 73	82@ 83	79@ 80

The market for other sorts in New York shows a slighter decline, as follows:

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality	95 @96	Esmeralda, sausage	80 @81
Massai, red	95 @96	Guayaquil, strip	69 @70
Benguella	71 @72	Nicaragua, scrap	78 @79
Cameroon ball	64 @65	Panama, slab	59 @60
Accra flake	32 @33	Mexican, scrap	78 @79
Lopori ball, prime	98 @99	Mexican, slab	59 @60
Lopori strip, prime	93 @94	Mangabeira, sheet	48 @57
Ikelemba	99 @100	EAST INDIAN.	
Madagascar, pinky	80 @81	Assam	88 @89
		Borneo	39 @40

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	6$100	Upriver, fine	7$650
Islands, coarse	3$100	Upriver, coarse	5$550

Exchange, 13 1/16 *d.*

Last Manáos advices:

Upriver, fine	7$250	Upriver, coarse	4$750

Exchange, 13 3/32 *d.*

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK. Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, October 31 *tons*	5	4 =	9	82	170
Arrivals, November	862	423 =	1285	1166	1463
Aggregating	867	427 =	1294	1248	1633
Deliveries, November	862	425 =	1287	1216	1462
Stocks, November 30	5	2 =	7	32	171

	PARÁ. 1904.	1903.	1902.	ENGLAND. 1904.	1903.	1902.
Stocks, October 31. *tons*	165	345	145	111	435	1250
Arrivals, November	2720	2890	2650	994	1035	1000
Aggregating	2885	3235	2795	1105	1470	2250
Deliveries, November	2345	3040	2640	925	1100	1050
Stocks, Nov. 30	540	195	155	180	370	1200

	1904.	1903.	1902.
World's visible supply, November 30 *tons*	2067	2648	3082
Pará receipts, July 1 to November 30	9331	9290	8734
Pára receipts of Caucho, same dates	599	594	556
Afloat from Pará to United States, Nov. 30	520	1017	710
Afloat from Pará to Europe, November 30	820	1034	846

NEW YORK RUBBER PRICES FOR NOVEMBER (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine	1.16@1.31	92@1.02	78 @82
Upriver, coarse	89@ 98	78@ 83	63 @68
Islands, fine	1.12@1.26	90@ 98	73 @76
Islands, coarse	62@ 73	54@ 58	48 @51
Cametá, coarse	63@ 72	53@ 58	48 @52

PARITY TABLE OF RUBBER PRICES.

PER POUND. CENTS.	S.	D.	PER KILO. FRANCS.	MARKS.	PER POUND. CENTS.	S.	D	PER KILO. FRANCS.	MARKS.
65	2	8 1/8	7.40	6.00	95	3	11	10.58	8.80
70	2	10 1/2	8.00	6 50	100	4	1 3/8	11.83	9.25
75	3	1	8.55	6.93	105	4	3 3/4	12.00	9.70
80	3	3 1/2	9 12	7.40	110	4	6 1/4	12.54	10.20
85	3	5 7/8	9.68	7.85	115	4	8 3/4	13.10	10.63
90	3	8 3/8	10.26	8.30	120	4	11 1/4	13.68	11.10

Rubber Receipts at Manaos.

DURING November and five months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	NOVEMBER. 1904.	1903.	1902.	JULY-NOVEMBER. 1904.	1903.	1902.
Rio Purús *tons*	497	512	249	1694	1613	1448
Rio Madeira	216	199	240	1249	1208	1134
Rio Juruá	260	468	183	665	882	452
Rio Javary—Iquitos	302	304	246	1158	1070	554
Rio Solimões	144	123	153	258	306	598
Rio Negro	15	32	21	33	49	90
Total	1434	1638	1092	5057	5128	4276
Caucho	124	44	94	458	472	415
Total	1558	1682	1186	5515	5600	4691

Ceylon Rubber Exports.

DETAILS of shipments of plantation rubber for eleven months, to November 28, 1904:

To—	Pounds.	To—	Pounds.
Great Britain	55,004	France	60
Germany	7,221	Holland	15
Australia	884		
India	119	Total	63,447
Belgium	111	11 months, 1903	38,915
United States	63		

Bordeaux.

IMPORTS OF RUBBER—JANUARY TO OCTOBER.

	1903.	1904.
January *kilos*	66,864	54,550
February	95,007	169,025
March	119,582	94,615
April	97,641	121,560
May	104,098	91,125
June	63,473	65,060
July	50,215	72,220
August	151,110	208,185
September	103,450	87,400
October	67,850	57,903
Total	919,290	1,021,643

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots, in cents per pound—show a slight advance over the figures last reported, as follows:

Old Rubber Boots and Shoes—Domestic	6 3/8 @ 6 1/2
Do —Foreign	5 5/8 @ 5 3/4
Pneumatic Bicycle Tires	3 1/2 @ 4
Solid Rubber Wagon and Carriage Tires	6
White Trimmed Rubber	8 1/2 @ 8 3/4
Heavy Black Rubber	4
Air Brake Hose	2 1/2 @ 2 5/8
Fire and Large Hose	2 @ 2 1/4
Garden Hose	1 3/4 @ 1 7/8
Matting	3/4 @ 1

London.

EDWARD TILL & Co. [December 1] report stocks:

		1904.	1903.	1902.
		tons		
LONDON	Pará sorts	—	—	—
	Borneo	30	20	93
	Assam and Rangoon	4	4	2
	Other sorts	558	250	230
	Total	592	274	325
LIVERPOOL	Pará	178	374	1178
	Caucho	94	28	38
	Other sorts	643	509	542
	Total, United Kingdom	1507	1185	2083
	Total, November 1	1307	1185	2337
	Total, October 1	1666	866	2464
	Total, September 1	1508	1364	2731
	Total, August 1	1764	1781	3053
	Total, July 1	1920	2285	3595
	Total, June 1	1667	2248	3687

PRICES PAID DURING NOVEMBER.

	1904.	1903.	1902.
Pará fine, hard	4/11½@5/ 5½	3/10 @4/ 2	3/4½@3/ 6
Do soft	4/11 @5/ 4½	3/9 @4/	3/0¾@3/ 1½
Negroheads, scrappy	3/ 9½@3/11½	3/ 3 @3/ 4¼	2/8½@2/10
Do Cametá	2/ 9½@2/10½	2/ 3½@2/ 5½	2/0¼@2/ 1¼
Bolivian	No sales	4/ @4/ 2	3/4¾@3/6
Caucho, ball	3/ 5 @3/ 6½	3/ 3 @3/ 4¾	2/7 @2/8½
Do slab	2/11½@3/ 1	2/ 6½@2/ 9	2/3 @2/3½
Do tails	2/ 8½@3/ 2½	2/10	2/4

DECEMBER 9.—The market for Pará has developed extreme weakness since the beginning of the month, prices showing a decline of about 3*d.* per pound. A large business has been done, comprising fine hard spot and December delivery down to 5*s.* 2½*d.*; January down to 5*s.* 1*d.*; February at 5*s.* 2*d.*@5*s.* 1¾*d.*; March 5*s.* 1½*d.*@4*s.* 11¾*d.*; and April 4*s.* 11¾*d.* Soft fine also lower, with small sales closing sellers of December delivery at 5*s.* 1*d.* Peruvian: Large sales have been made of fine spot and near delivery at 5*s.* 1½*d.*@5*s.* 1*d.* Ball dull, with sellers spot at 5*s.* 5½*d.*, slab scarce, 2*s.* 11½*d.* value. Medium grades have been in fair demand and a good business has been done. At the auctions to-day the fair supplies met little competition and only a small quantity sold at rather easier rates.

DECEMBER 16.—The market for Pará has continued depressed, owing to the pressure to sell by speculators, and prices declined a further 2½*d.* per pound. Towards the close, however, more firmness has prevailed, and values closed at some recovery. Business in fine hard has been moderate, including spot and near down to 5*s.*, closing 5*s.* ½*d.* buyers; January delivery down to 4*s.* 11½*d.*; February-March at 4*s.* 10¼*d.* @ 4*s.* 10½*d.*; and March-April at 4*s.* 10*d.* Soft fine: A fair business has been done for January delivery at 4*s.* 10*d.*; sport sold at 4*s.* 11*d.* @ 4*s.* 11¼*d.*

PLANTATION RUBBER (FROM PARÁ SEED).

November 25 Auction.—**Ceylon:** 40 packages offered and 28 sold. Fine thin biscuits at 6*s.* 1*d.* [=$1.48]; fair to good scrap at 4*s.* 6*d.* to 4*s.* 9*d.*; middling scrap at 3*s.* 6*d.* to 3*s.* 10*d.*; dirty ditto at 3*s.*

December 9 Auction.—Twenty-eight packages offered and 13 sold. **Straits**, fine pale and dark biscuits at 5*s.* 9*d.*; fine sheet, some dark, at 5*s.* 9*d.*; black sheet at 3*s.* **Ceylon**, good scrap at 4*s.* 4¾*d.*

Also, 26 packages of cultivated **Manicoba** rubber offered and sold—good thin clean sheet at 4*s.* 7¾*d.*@4*s.* 8*d.*

Liverpool.

WILLIAM WRIGHT & Co., report [December 1]:

Fine Pará.—With heavy American buying in Pará and Manáos, the market has been strong and active, closing with an advance of 5½*d.* per pound, establishing a new record of 5*s.* 5½*d.* [=$1.32¾] for Upriver fine. At the present stage of the crop, even granting supplies are moderate and that there is no reserve of stock, we see no reason for such extraordinary high prices. How long the Americans intend to keep prices up we cannot say, but there is no doubt that these unnecessarily high rates will tend to curtail consumption.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the monthly inscription sale on December 16 about 646 tons were disposed of, of which 580 tons found purchasers. The market was much firmer than the recent weakness for Pará sorts in the Liverpool markets would have led us to expect. Prices were very irregular, varying from 35 to 40 centimes (about 3 per cent.) below valuations, to 37 centimes above. The average comes out at a fraction above valuations. The United States participated in this result by sending substantial buying orders. Among the principal lots the following may be mentioned:

		Estimations.	Sold at.
40 tons	Uelé	*francs* 10.12½	10.22½
16 "	Aurwimi (average)	9.20	9.30
10 "	Aurwimi (average)	9.20	9.02½
14 "	Upper Congo fuses	8.	9.02½
13 "	Equateur (2 tons remainder)	10.90	10.60 10.52½
26 "	Upper Congo	10.75	10.70
12 "	Mongalla	10.07½	10.30
8 "	Lopori I (average)	10.90	10.75
28 "	Lopori II (average)	6.85	6.75

The result of the sale as a whole may be considered as very satisfactory. C. SCHMID & CO., SUCCESSEURS.

Antwerp, December 16, 1904.

ANTWERP RUBBER STATISTICS FOR NOVEMBER.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Oct. 31.. *kilos*	710,860	876,637	350,138	266,105	909.047
Arrivals in Nov	336.701	361,895	235,231	683.521	473.404
Congo sorts	267,778	303.453	201,172	660,897	452,215
Other sorts	68,923	58,442	34.059	22,624	21,189
Aggregating	1,047.561	1,238,532	585.369	949,626	1,382,451
Sales in November	435.835	558,390	399,408	106.325	317,805
Stocks, Nov. 30	611,726	680,142	185.961	843,301	1,064.646
Arrivals since Jan. 1	5,182,012	5,088,325	4,604.740	5,644.282	5,527,900
Congo sorts	4,263,232	4,580,456	4,232,804	5,234,931	4,750,277
Other sorts	918,780	507,869	371 945	409,351	777.623
Sales since Jan. 1	5,181,186	5,066,288	4,833,497	5.414.930	4,755,245

RUBBER ARRIVALS AT ANTWERP.

Nov. 30.—By the *Anversville*, from the Congo:

Bunge & Co	(Société Générale Africaine) *kilos*	92,000
Do	(Chemins de fer Grand Lacs)	18,000
Do	(Société "La Kotto")	1,000
Do	(Sultanats du Haut Obangi)	13,000
Société Equatoriale Congolaise	(Société L'Ikelemba)	2,500
Comptoir Commercial Congolais		9,000
Comptoir des Produits Coloniaux	(Ekela Kadei Sangha)	11,500
Cie. Commerciale des Colonies	(Cie. Française du Congo)	5,000
L. & W. Van de Velde	(Cie. du Kasai)	73,000
Société Coloniale Anversoise	(La Lulonga)	5,000
Do	(Belge du Haut Congo)	1,000
Do	(Cie. de Lomami)	3,500
Do	(La Haut Sangha)	12,500
Société Générale de Commerce	(Alimaienne)	5,500
M. S. Cols	(Alima)	4,800 257,300

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

December 5.—By the steamer *Amazonense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co	309,600	52,200	83,200	3,500=	448,500
Poel & Arnold	147.300	35,100	81,000	2,600=	266,000
New York Commercial Co.	105,000	17.400	63,000	500=	185,900
A. T. Morse & Co	54,500	11,100	72 400	. . .=	138,000
Edmund Reeks & Co	25.900	5,000	5,800	. . .=	36,700
Hagemeyer & Brunn	10.500	8,800	2,200	.=.	21.500
Lionel Hagenaers & Co	14,000	. . . . .	2.900	.=.	16,900
Total	666,800	129,600	310,500	6,600=	1,113,500

December 15.—By the steamer *Maranhense*, from Manáos and Pará:

New York Commercial Co.	222,200	42,100	107,700	9,400=	381,400
General Rubber Co.	260,200	35,900	74,500	2,900=	373,500
Poel & Arnold	96,000	10,700	126,300	1,200=	234,200
A. T. Morse & Co.	40,100	6,000	52,900	300=	99,300
Edmund Reeks & Co.	32,300	10,700	17,100	.....=	60,100
Hagemeyer & Brunn	37,800	2,000	17,500	.....=	57,300
Lawrence Johnson & Co.	10,300	3,200	2,600	.....=	16,100
Lionel Hagenaers & Co.	14,700	.....	1,500	.....=	16,200
Total.	713,600	110,600	400,100	13,800=	1,238,100

December 27.—By the steamer *Fluminense*, from Manáos and Pará:

General Rubber Co.	208,500	39,600	66,400	1,900=	316,400
New York Commercial Co.	130,100	24,200	125,800	3,900=	284,000
A. T. Morse & Co.	148,200	31,700	53,600	1,900=	235,400
Poel & Arnold	84,300	17,600	86,100	1,900=	191,900
Edmund Reeks & Co.	71,500	11,700	21,600	.....=	104,800
Thomsen & Co.	18,600	.....	3,200	.....=	21,800
Lionel Hagenaers & Co.	11,800	.....	2,400	.....=	14,200
Total.	673,000	126,800	359,100	9,600=	1,168,500

[NOTE.—The steamer *Benifacc*, from Pará, is due at New York on January 3, with 860 tons Rubber.]

PARA RUBBER VIA EUROPE.

		POUNDS.
NOV. 29.—By the *Armenian*=Liverpool:		
Poel & Arnold (Coarse)		7,000
DEC. 2.—By the *Cedric*=Liverpool:		
Poel & Arnold (Fine)	45,000	
Poel & Arnold (Coarse)	7,000	
A. T. Morse & Co. (Coarse)	13,000	65,000
DEC. 6.—By the *Etruria*=Liverpool:		
New York Commercial Co. (Coarse)		30,000
DEC. 7.—By the *Georgic*=Liverpool:		
Poel & Arnold (Fine)		52,000
DEC. 8.—By the *Oceanic*=Liverpool:		
Poel & Arnold (Fine)		95,000
DEC. 12.—By the *Lucania*=Liverpool:		
New York Commercial Co. (Caucho)		70,000
DEC. 16.—By the *Majestic*=Liverpool:		
Poel & Arnold (Coarse)	5,500	
Poel & Arnold (Fine)	4,500	10,000
DEC. 19.—By the *Umbria*=Liverpool:		
New York Commercial Co. (Fine)	19,000	
New York Commercial Co. (Coarse)	11,000	
A. T. Morse & Co. (Coarse)	4,500	34,500

OTHER ARRIVALS IN NEW YORK

CENTRALS.

		POUNDS.
NOV. 26.—By the *Philadelphia*=London:		
Hirsch & Kaiser	24,000	
J. H. Rossbach & Bros.	17,000	
Poel & Arnold	2,000	43,000
NOV. 25.—By the *Baltic*=Liverpool:		
Emile Boris		15,000
NOV. 26.—By the *Havana*=Mexico:		
H. Marquardt & Co.	500	
Graham, Hinkley & Co.	500	
L. N. Chemedlin & Co	500	
E. Steiger & Co	200	
For Hamburg	3,000	4,700
NOV. 28.—By the *Comus*=New Orleans:		
A. T. Morse & Co.	7,000	
G. Amsinck & Co.	4,500	
Manhattan Rubber Mfg. Co.	2,500	
A. N. Rotholz	1,000	15,000
NOV. 25.—By the *Graf Waldersee*=Hamburg:		
Poel & Arnold		37,000
NOV. 30.—By the *Alliance*=Colon:		
Gabriel Perigault	2,800	
Hirzel, Feltman & Co.	2,300	
A. N. Rotholz	300	5,400
NOV. 30.—By the *Siberia*=Colombia:		
Isaac Kubie & Co.	3,000	
A. Lindo & Co.	2,000	
Andreas & Co.	1,500	
Lawrence Johnson & Co.	1,500	
American Trading Co.	1,200	
G. Amsinck & Co.	1,100	10,300
DEC. 1.—By the *Flandria*=Santha Martha:		
A. Held	8,500	
G. Amsinck & Co.	1,500	10,000
DEC. 5.—By the *Monterey*=Mexico:		
Harburger & Stack	800	
E. N. Tibbals & Co	500	
E. Steiger & Co.	500	
L. N. Chemedlin & Co	800	2,300
DEC. 6.—By the *Minnehaha*=London:		
George A. Alden & Co.		15,000
DEC. 6.—By the *Altai*=Colombia, etc.:		
A. Held	3,000	
Isaac Brandon & Bros.	1,000	
Isaac Kubie & Co.	800	
Cadenas & Coe.	700	5,500
DEC. 7.—By the *Advance*=Colon:		
G. Amsinck & Co.	19,300	
Hirzel, Feltman & Co.	8,500	
J. A. Medina & Co	7,300	

CENTRALS—Continued.

Lawrence Johnson & Co.	4,700	
E. B. Strout	3,700	
A. Santos & Co.	3,300	
Piza Nephews & Co.	3,000	
Dumarest Bros. & Co.	2,500	
A. Rosenthal's Sons	1,500	
A. M. Capen's Sons	1,100	
Isaac Brandon & Bros.	1,000	
D. A. De Lima & Co.	1,000	
Meyer & Hecht	900	
R. G. Barthold	700	
J. A. Pauli & Co.	600	
Gabriel Perigault	600	59,300
DEC. 8.—By the *Tintoretto*=Bahia:		
J. H. Rossbach & Bros.	12,000	
Hirsch & Kaiser	10,000	22,000
DEC. 9.—By *El Valle*=New Orleans:		
A. T. Morse & Co.	7,000	
Manhattan Rubber Mfg. Co.	1,500	
G. Amsinck & Co.	1,500	
Eggers & Heinlein	1,000	11,000
DEC. 12.—By the *Comus*=New Orleans:		
Eggers & Heinlein	2,500	
Manhattan Rubber Mfg. Co.	1,800	
A. N. Rotholz	1,500	5,800
DEC. 13.—By the *Valencia*=Savanilla:		
American Trading Co.	4,500	
J. A. Pauli & Co.	2,000	
A. D. Straus & Co.	700	7,200
DEC. 14.—By the *City of Washington*=Colon:		
Gabriel Perigault	3,500	
Isaac Brandon & Bros.	2,100	
G. Amsinck & Co.	2,300	
Hirzel, Feltman & Co.	1,000	
Eggers & Heinlein	1,300	
A. Rosenthal's Sons	1,200	11,400
DEC. 14.—By the *Moltke*=Hamburg:		
A. T. Morse & Co.		4,500
DEC. 19.—By the *St. Paul*=London:		
Hirsch & Kaiser		13,500
DEC. 19.—By the *Proteus*=New Orleans:		
A. T. Morse & Co.	6,500	
G. Amsinck & Co.	1,000	
Manhattan Rubber Mfg. Co.	1,000	8,500
DEC. 19.—By the *Vigilancia*=Mexico:		
E. Steiger & Co	1,100	
H. Marquardt & Co.	1,200	
Fred. Probst & Co.	700	
Smithers, Nordenholt & Co.	1,000	
Graham, Hinkley & Co.	800	
For Hamburg, etc.	1,000	5,800
DEC. 21.—By the *Seguranca*=Colon:		
Hirzel, Feltman & Co.	15,500	
G. Amsinck & Co.	12,100	
E. B. Strout	7,400	
J. A. Medina & Co.	6,300	
Roldan & Van Sickle	6,000	
Dumarest Bros. & Co	4,700	
A. Santos & Co.	3,600	
Gabriel Perigault	3,700	
George A. Alden & Co.	3,500	
American Trading Co.	2,600	
Meyer Hecht & Co.	1,800	
Lawrence Johnson & Co.	1,800	
Isaac Kubie & Co.	1,700	
Wallace L. Gough	1,200	
Samuel M. Edier	1,000	
Silva, Bussenius & Co.	900	
Isaac Brandon & Bros.	800	
A. Rosenthal's Sons	800	75,100
DEC. 21.—By the *Sarnia*=Columbia, etc.:		
Pedro A. Lopez	2,500	
A. Held	1,500	
Samuels & Cummings	800	
G. Amsinck & Co.	700	
Kunhardt & Co.	2,500	
A. D. Straus & Co.	500	8,500
DEC. 22.—By the *Byron*=Bahia:		
J. H. Rossbach & Bros.	24,000	
A. D. Hetch & Co.	15,000	
Hirsch & Kaiser	14,000	53,000
DEC. 23.—By the *Baltic*=Liverpool:		
Emile Boris		7,000

AFRICANS.

		POUNDS.
NOV. 25.—By the *Graf Waldersee*=Hamburg:		
Poel & Arnold	50,000	
A. T. Morse & Co.	33,000	
George A. Alden & Co.	13,500	
Rubber Trading Co.	12,000	
Earle Brothers	4,500	113,000
NOV. 25.—By the *Baltic*=Liverpool:		
George A. Alden & Co.	48,000	
Wallace L. Gough	22,000	70,000
NOV. 26.—By the *Campania*=Liverpool:		
General Rubber Co.	73,000	
George A. Alden & Co.	30,000	103,000
NOV. 28.—By the *Amsteldyk*=Rotterdam:		
Joseph Cantor		8,000
NOV. 29.—By the *Armenian*=Liverpool:		
Poel & Arnold	75,000	
George A. Alden & Co.	45,000	
A. T. Morse & Co	25,000	
Rubber Trading Co.	4,500	149,500
NOV. 29.—By the *Blucher*=Hamburg:		
A. T. Morse & Co.	75,000	
Poel & Arnold	7,000	
Rubber Trading Co	5,000	87,000
DEC. 2.—By the *Cedric*=Liverpool:		
George A. Alden & Co.	80,000	
Poel & Arnold	5,000	
Henry A. Gould Co.	4,000	89,000
DEC. 5.—By the *Eutruia*=Liverpool:		
General Rubber Co.	35,000	
George A. Alden & Co.	11,500	46,500
DEC. 7.—By the *Georgic*=Liverpool:		
General Rubber Co.		11,000
DEC. 7.—By the *British Empire*=Antwerp:		
A. T. Morse & Co.		100,000
DEC. 7.—By the *Finland*=Antwerp:		
A. T. Morse & Co.	185,000	
George A. Alden & Co.	73,000	
Poel & Arnold	70,000	
Joseph Cantor	17,000	
Rubber Trading Co.	14,000	359,000
DEC. 8.—By the *Oceanic*=Liverpool:		
Poel & Arnold	30,000	
A. T. Morse & Co.	15,000	45,000
DEC. 10.—By the *La Lorraine*=Havre:		
A. T. Morse & Co.	11,000	
Poel & Arnold	5,000	16,000
DEC. 12.—By the *New York*=London:		
Robinson & Tallman		10,000
DEC. 12.—By the *Lucania*=Liverpool:		
General Rubber Co.	55,000	
George A. Alden & Co.	22,000	77,000
DEC. 14.—By the *Zeeland*=Antwerp:		
A. T. Morse & Co.	11,000	
Poel & Arnold	7,000	18,000
DEC. 14.—By the *Moltke*=Hamburg:		
A. T. Morse & Co.	80,000	
Rubber Trading Co	17,000	
Joseph Cantor	10,000	
George A. Alden & Co.	10,000	
Poel & Arnold	4,000	121,000
DEC. 14.—By the *Rotterdam*=Rotterdam:		
Poel & Arnold		30,000
DEC. 16.—By the *Bovic*=Liverpool:		
General Rubber Co.	120,000	
George A. Alden & Co	35,000	155,000
DEC. 17.—By the *Mongolian*=Glasgow:		
George A. Alden & Co.		22,000
DEC. 16.—By the *Majestic*=Liverpool:		
Poel & Arnold	35,000	
Wallace L. Gough	32,500	
A. T. Morse & Co.	6,000	73,500

AFRICANS.—Continued.

DEC. 21.—By the *Kroonland*=Antwerp:

Rubber Trading Co.		10,000

DEC. 22.—By the *Victorian*=Liverpool:

George A. Alden & Co.	30,000	
A. T. Morse & Co.	20,000	50,000

DEC. 23.—By the *Baltic*=Liverpool:

General Rubber Co.	80,000	
Poel & Arnold	60,000	
A. T. Morse & Co.	45,000	
Wallace L. Gough	22,000	
Karis Brothers	3,500	210,500

EAST INDIAN.

POUNDS.

NOV. 25.—By the *Hudson*=Singapore:

Robert Brauss & Co.	35,000	
Poel & Arnold	35,000	
George A. Alden & Co.	22,000	
Winter & Smillie	15,000	
A. T. Morse & Co.	11,000	118,000

NOV. 30.—By the *Epsom*=Singapore:

Winter & Smillie	8,000	
Poel & Arnold	15,000	23,000

DEC. 6.—By the *Minnehaha*=London:

Robinson & Tallman	15,000	
George A. Alden & Co.	3,000	18,000

DEC. 13.—By the *Sagami*=Singapore:

Robert Brauss & Co.	30,000	
George A. Alden & Co	15,000	
Winter & Smillie	15,000	60,000

DEC. 19.—By the *St. Paul*=London:

Poel & Arnold		30,000

DEC. 21.—By the *Menominee*=London:

Poel & Arnold		35,000

GUTTA-JELUTONG.

NOV. 25.—By the *Hudson*=Singapore:

George A. Alden & Co.	115,000	
Robert Brauss & Co.	60,000	
Poel & Arnold	280,000	
Hagemeyer & Brunn	45,000	480,000

GUTTA-JELUTONG—Continued.

NOV. 30.—By the *Epsom*=Singapore:

Winter & Smillie	60,000	
Poel & Arnold	30,000	
Heabler & Co.	45,000	135,000

DEC. 13.—By the *Sagami*=Singapore:

Robert Brauss & Co.	150,000	
George A. Alden & Co.	55,000	
Winter & Smillie	40,000	245,000

DEC. 21.—By the *Hindustan*=Singapore:

George A. Alden & Co.	200,000	
Robinson & Tallman	95,000	
J. H. Recknagel & Son	55,000	450,000

GUTTA-PERCHA AND BALATA.

POUNDS.

NOV. 25.—By the *Hudson*=Singapore:

Heabler & Co.	45,000	
W. L. Wadleigh	5,000	50,000

NOV 25.—By the *Graf Waldersee*=Hamburg:

To Order	7,000

NOV. 29.—By the *Mesaba*=London:

A. W. Brunn	9,000

DEC. 17.—By the *Manitou*=London:

A. W. Brunn	4,000

DEC 21.—By the *Hindustan*=Singapore:

Heabler & Co.	55,000

BALATA.

NOV. 28.—By the *Banes*=Ciudad Bolivar:

Frame & Co.	1,500	
Hamburg, etc.	70,000	71,500

DEC. 5.—By the *Fonabelle*=Surinam:

Charles P. Shilstone	3,500	
G. Amsinck & Co.	1,000	4,500

DEC. 8.—By the *Maraval*=Trinidad:

Frame & Co.	3,500

DEC 23.—By the *Grenada*=Trinidad:

Frame & Co.	4,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—NOVEMBER.

Imports:	POUNDS.	VALUE.
India-rubber	5,251,931	$3,954,343
Gutta-percha	28,472	13,656
Gutta-jelutong (Pontianak)	1,700,454	53,874
Total	6,980,857	$4,021,873
Exports:		
India-rubber	41,421	$37,389
Reclaimed rubber	313,700	36,426
Rubber Scrap Imported	188,773	$42,474

BOSTON ARRIVALS.

	POUNDS.	
NOV. 1.—By the *Canadian*=Liverpool:		
Poel & Arnold—African		4,528
NOV. 2.—By the *Columbian*=London:		
George A. Alden & Co.—East Indian.		8,388
NOV. 5.—By the *Georgian*=Antwerp:		
Winter & Smillie—African		6,767
NOV. 14.—By the *Cymric*=Liverpool:		
Poel & Arnold.—African		2,309
NOV. 15.—By the *Devonian*=Liverpool:		
George A. Alden & Co.—Caucho		15,931
NOV. 23.—By the *Sagamore*=Liverpool:		
George A. Alden & Co.—African		954
NOV. 24.—By the *Sagamore*=Liverpool:		
George A. Alden & Co.—Central	137,500	
George A. Alden & Co.—African	2,587	140,087
NOV. 26.—By the *Philadelphia*=London:		
George A. Alden & Co.—African	55,800	
George A. Alden & Co.—East Indian.	14,071	69,871
NOV. 28.—By the *Ivernia*=Liverpool:		
George A. Alden & Co.—Central		22,776
NOV. 30.—By the *Bohemian*=Liverpool:		
George A. Alden & Co.—African		45,549
Total		317,160

[Value, $313,039.]

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (POUNDS)

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	5,397,981	298,262	5,099,719
January–September	44,553,345	3,586,325	41,967,020
Ten months, 1904	49,951,326	2,884,587	47,066,739
Ten months, 1903	46,495,455	3,058,223	43,537,232
Ten months, 1902	41,290,317	2,816,659	38,473,658

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	3,844,400	2,670,752	1,173,648
January–September	41,722,016	24,239,158	17,482,858
Ten months, 1904	45,566,416	26,909,910	18,656,506
Ten months, 1903	44,926,000	32,337,424	12,588,576
Ten months, 1902	38,779,776	26,096,336	12,683,440

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	3,079,780	484,880	2,594,900
January–September	26,602,840	7,302,900	19,299,940
Ten months, 1904	29,682,620	7,787,780	21,894,840
Ten months, 1903	28,516,400	9,751,500	18,764,900
Ten months, 1902	27,540,920	11,475,640	16,065,280

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	141,680	25,740	115,940
January–September	1,128,160	77,440	1,050,720
Ten months, 1904	1,269,840	103,180	1,166,660
Ten months, 1903	1,286,120	126,720	1,159,400
Ten months, 1902	1,162,700	107,360	1,055,340

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	1,315,820	728,860	586,960
January–September	15,903,360	8,638,740	7,264,620
Ten months, 1904	17,219,180	9,367,600	7,851,580
Ten months, 1903	13,195,820	7,619,040	5,576,780
Ten months, 1902	13,277,000	8,326,340	4,950,660

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1904	201,960	2,640	199,320
January–September	2,095,940	16,280	2,079,660
Ten months, 1904	2,297,900	18,920	2,278,980
Ten months, 1903	2,400,420	22,660	2,377,760
Ten months, 1902	2,179,320	12,320	2,167,000

BELGIUM †

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS‡
August, 1904	828,916	1,359,507	[‡530,591]
January–July	10,870,468	8,368,448	2,502,020
Eight months, 1904	11,699,384	9,727,955	1,971,429
Eight months, 1903	10,470,295	8,134,959	2,335,336
Eight months, 1902	10,150,575	7,182,980	2,967,595

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce. †Special Commerce. ‡Net Exports.